



US Army Corps
of Engineers

MISCELLANEOUS PAPER GL-90-19

2

FOUNDATION INVESTIGATION OF THE UPSTREAM SWITCHYARD OF WILSON DAM POWERPLANT: MICROGRAVITY SURVEY

by

Donald E. Yule, Dwain K. Butler, Michael K. Sharp

Geotechnical Laboratory

DEPARTMENT OF THE ARMY

Waterways Experiment Station, Corps of Engineers
3909 Halls Ferry Road, Vicksburg, Mississippi 39180-6199

AD-A227 708

DTIC
ELECTE
OCT 23 1990
S B D
Co



September 1990

Final Report

Approved For Public Release; Distribution Unlimited

"Original contains color
plates: All DTIC reproductions
will be in black and
white"

Prepared for Tennessee Valley Authority
Chattanooga, Tennessee 37402-2801

90 10 22 182



Destroy this report when no longer needed. Do not return
it to the originator.

The findings in this report are not to be construed as an official
Department of the Army position unless so designated
by other authorized documents.

The contents of this report are not to be used for
advertising, publication, or promotional purposes.
Citation of trade names does not constitute an
official endorsement or approval of the use of
such commercial products.

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE

| REPORT DOCUMENTATION PAGE | | | | Form Approved OMB No. 0704-0188 | |
|--|-------|--|--|---|----------------------------|
| 1a. REPORT SECURITY CLASSIFICATION Unclassified | | | 1b. RESTRICTIVE MARKINGS | | |
| 2a. SECURITY CLASSIFICATION AUTHORITY | | | 3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited | | |
| 2b. DECLASSIFICATION/DOWNGRADING SCHEDULE | | | | | |
| 4. PERFORMING ORGANIZATION REPORT NUMBER(S) Miscellaneous Paper GL-90-19 | | | 5. MONITORING ORGANIZATION REPORT NUMBER(S) | | |
| 6a. NAME OF PERFORMING ORGANIZATION USAEWES Geotechnical Laboratory | | 6b. OFFICE SYMBOL (If applicable) CEWES-GG-H | 7a. NAME OF MONITORING ORGANIZATION | | |
| 6c. ADDRESS (City, State, and ZIP Code) 3909 Halls Ferry Road Vicksburg, MS 39180-6199 | | | 7b. ADDRESS (City, State, and ZIP Code) | | |
| 8a. NAME OF FUNDING/SPONSORING ORGANIZATION Tennessee Valley Authority | | 8b. OFFICE SYMBOL (If applicable) MR-35-116D-C | 9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER Contract No. TV-78058A; dtd 22 May 1989 | | |
| 8c. ADDRESS (City, State, and ZIP Code) 1101 Market Street Chattanooga, TN 37402-2801 | | | 10. SOURCE OF FUNDING NUMBERS | | |
| | | PROGRAM ELEMENT NO. | PROJECT NO. | TASK NO. | WORK UNIT ACCESSION NO. |
| 11. TITLE (Include Security Classification) Foundation Investigation of the Upstream Switchyard of Wilson Dam Powerplant: Microgravity Survey | | | | | |
| 12. PERSONAL AUTHOR(S) Yule, Donald E.; Butler, Duain K.; Sharp, Michael K. | | | | | |
| 13a. TYPE OF REPORT Final report | | 13b. TIME COVERED FROM _____ TO _____ | | 14. DATE OF REPORT (Year, Month, Day) September 1990 | |
| | | | | 15. PAGE COUNT 71 | |
| 16. SUPPLEMENTARY NOTATION Available from National Technical Information Service, 5285 Royal Road, Springfield, VA 22161 | | | | | |
| 17. COSATI CODES | | | 18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number) | | |
| FIELD | GROUP | SUB-GROUP | Cavity detection Karst | | |
| | | | Foundation investigation Microgravity | | |
| | | | Geophysical investigation | | |
| 19. ABSTRACT (Continue on reverse if necessary and identify by block number) | | | | | |
| <p>→ A microgravity survey consisting of 347 stations was conducted in the upstream switchyard of the Wilson Dam powerplant. The objective of the survey was the detection of subsurface cavities or other anomalous conditions that could threaten the integrity of the switchyard structures. Six anomalous areas were identified on the gravity anomaly map and ranked for their interpreted significance. From these results, nine boring locations were selected to investigate the cause of the anomalies. This report presents details of the field survey, data processing interpretations, and recommended drilling locations for subsurface investigation.</p> | | | | | |
| 20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS | | | 21. ABSTRACT SECURITY CLASSIFICATION Unclassified | | |
| 22a. NAME OF RESPONSIBLE INDIVIDUAL | | | 22b. TELEPHONE (Include Area Code) | | 22c. OFFICE SYMBOL |

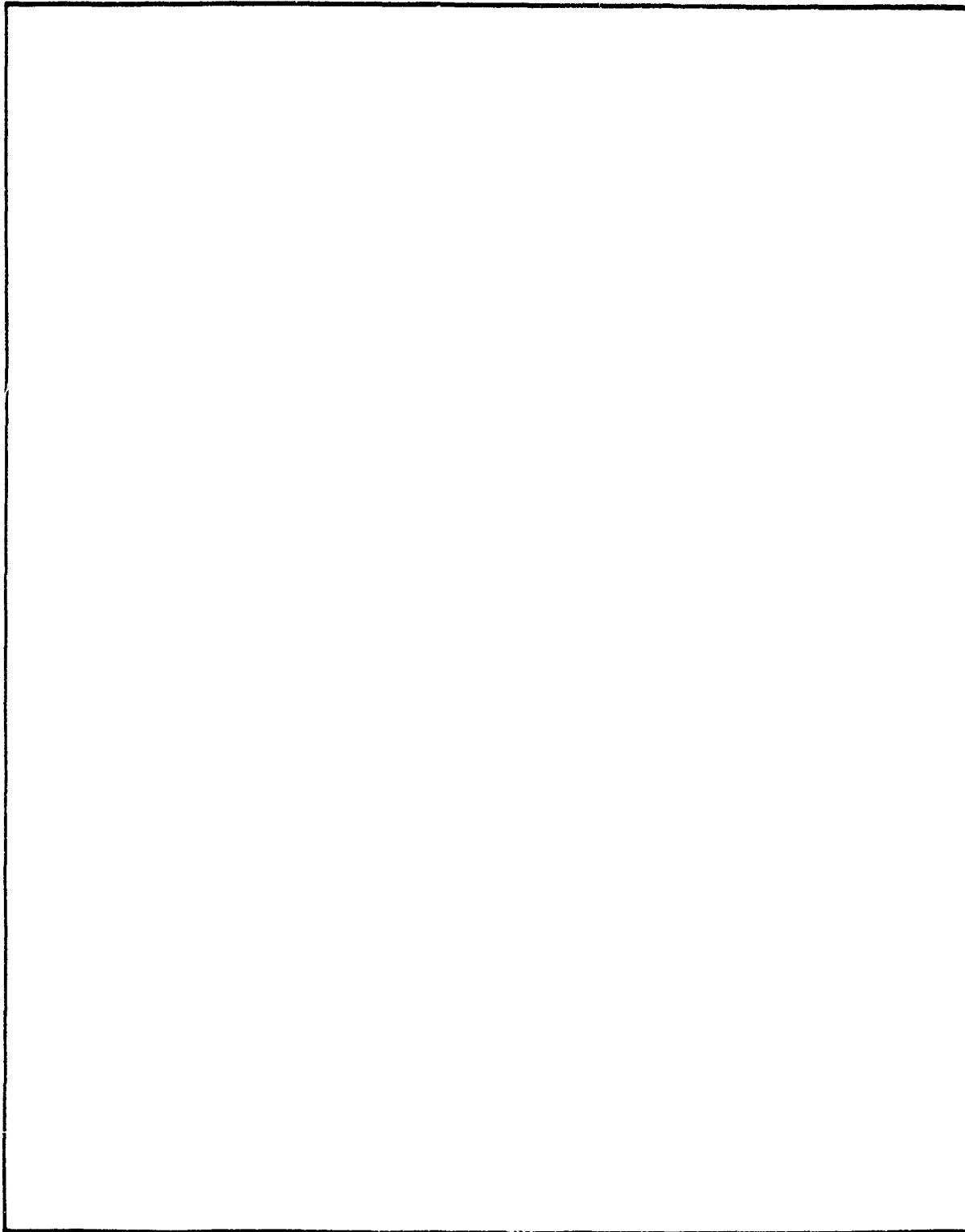
DD Form 1473, JUN 86

Previous editions are obsolete

SECURITY CLASSIFICATION OF THIS PAGE

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE



SECURITY CLASSIFICATION OF THIS PAGE

Preface

This report documents the microgravity survey conducted by the US Army Engineer Waterways Experiment Station (WES) for the Wilson Hydro Project Upstream Switchyard Subsurface Investigation, Wilson Dam, Florence, AL. The work was performed during the period 1 August through 31 December 1989 for the Tennessee Valley Authority (TVA), Power Engineering and Construction, Fossil and Hydro Engineering, Civil Engineering Department, Chattanooga, TN.

Mr. Harold L. Petty, Civil Engineering Department, Power Engineering and Construction, TVA, was Project Monitor for this work.

Mr. Donald E. Yule of the Earthquake Engineering and Seismology Branch (EESB), Earthquake Engineering and Geosciences Division (EEGD), Geotechnical Laboratory (GL), WES, was the Project Engineer for this study. Mr. Michael K. Sharp and Dr. Dwain K. Butler, Engineering Geophysics Branch (EGB), EEGD, GL, were coinvestigators and co-authors of this report. Dr. Butler provided overall technical supervision for this study. The work was conducted under the direct supervision of Mr. Joseph R. Curro, Jr., Chief, EGB; Dr. Mary Ellen Hynes, Chief, EESB; and Dr. Arley G. Franklin, Chief, EEGD. The project was under the overall supervision of Dr. William F. Marcuson III, Chief, GL.

COL Larry B. Fulton, EN, was Commander and Director of WES during the investigation. Dr. Robert W. Whalin was Technical Director.



| | |
|--------------------|--|
| Accession For | |
| NTIS GRA&I | <input checked="checked" type="checkbox"/> |
| DTIC TAB | <input type="checkbox"/> |
| Unannounced | <input type="checkbox"/> |
| Justification | |
| By _____ | |
| Distribution/ | |
| Availability Codes | |
| Dist | Avail and/or Special |
| A-1 | |

Contents

| | <u>Page</u> |
|---|-------------|
| Preface | 1 |
| List of Figures | 3 |
| Conversion Factors, Non-SI to SI (Metric) Units of Measurement | 4 |
| Summary | 5 |
| Background | 5 |
| Survey Details and Field Procedures | 8 |
| Data Corrections | 12 |
| Meter factor | 12 |
| Correction for time variation | 12 |
| Latitude correction | 13 |
| Free-air correction | 13 |
| Bouguer correction | 13 |
| Terrain correction | 13 |
| Data Processing | 14 |
| Field processing | 15 |
| Office processing | 15 |
| Data Presentation | 18 |
| Regional-Residual Field Separation | 19 |
| Row/column average removal | 19 |
| Polynomial surface fitting | 23 |
| Anomaly Selection and Assessment | 23 |
| Conclusion | 29 |
| References | 32 |
| Appendix A: Wilson Dam Upstream Switchyard Field Data and Corrected Data | A1 |

List of Figures

| <u>No.</u> | | <u>Page</u> |
|------------|--|-------------|
| 1 | Proposed mechanism for cavity formation in switchyards. | 7 |
| 2 | Location and general layout of survey grid. | 9 |
| 3 | Gravity measurement stations for upstream switchyard survey . . . | 10 |
| 4 | Views of upstream switchyard survey grid. | 11 |
| 5 | Gravity survey data correction and processing flowchart | 16 |
| 6 | Bouguer gravity map of upstream switchyard. | 20 |
| 7 | Site regional-residual separation using row/column averaging technique | 21 |
| 8 | Residual gravity map using row/column average separation technique. | 22 |
| 9 | Presentation of site gravity surface before site regional- residual separation | 24 |
| 10 | Polynomial surface fit models for the site regional field | 25 |
| 11 | Residual gravity map using polynomial surface fitting separation technique. | 27 |
| 12 | Anomaly selection in upstream switchyard. Regional-residual field separation using row/column average removal techniques. . | 28 |
| 13 | Anomaly selection in upstream switchyard. Regional-residual field separation using polynomial surface fitting techniques. . | 30 |

Conversion Factors, Non-SI To SI (Metric)

Units Of Measurement

Non-SI units of measurement used in this report can be converted to SI (metric) units as follows:

| <u>Multiply</u> | <u>By</u> | <u>To Obtain</u> |
|--------------------|------------|------------------|
| degrees (angle) | 0.01745329 | radians |
| feet | 0.3048 | metres |
| inches | 2.54 | centimetres |
| miles (US statute) | 1.609347 | kilometres |

FOUNDATION INVESTIGATION OF THE UPSTREAM SWITCHYARD
OF WILSON DAM POWERPLANT: MICROGRAVITY SURVEY

Summary

1. A microgravity survey consisting of 347 stations was conducted by personnel of the US Army Engineer Waterways Experiment Station (WES) in the upstream switchyard of Wilson Dam powerplant during August 1989. The objective of the survey was the detection of subsurface cavities or other anomalous conditions which could threaten the integrity of the switchyard and continuing operation of the powerplant. Preliminary results of the survey were forwarded to the Tennessee Valley Authority (TVA) in September 1989. Six anomalous areas were identified on the gravity anomaly contour map, and nine boring locations were selected to investigate the cause of the anomalies. The anomalies were ranked according to their interpreted significance. Eight boring location recommendations were in negative gravity anomaly areas, since negative anomalies could be caused by actual cavities or low density zones which might represent incipient cavity formation. The remaining boring location was in a positive anomaly area for verification purposes. Based on their familiarity with switchyard conditions, TVA personnel added two boring locations to a proposed subsurface investigation program (TVA 1989). This report presents details of the field survey, data processing, interpretations, and recommendations.

Background

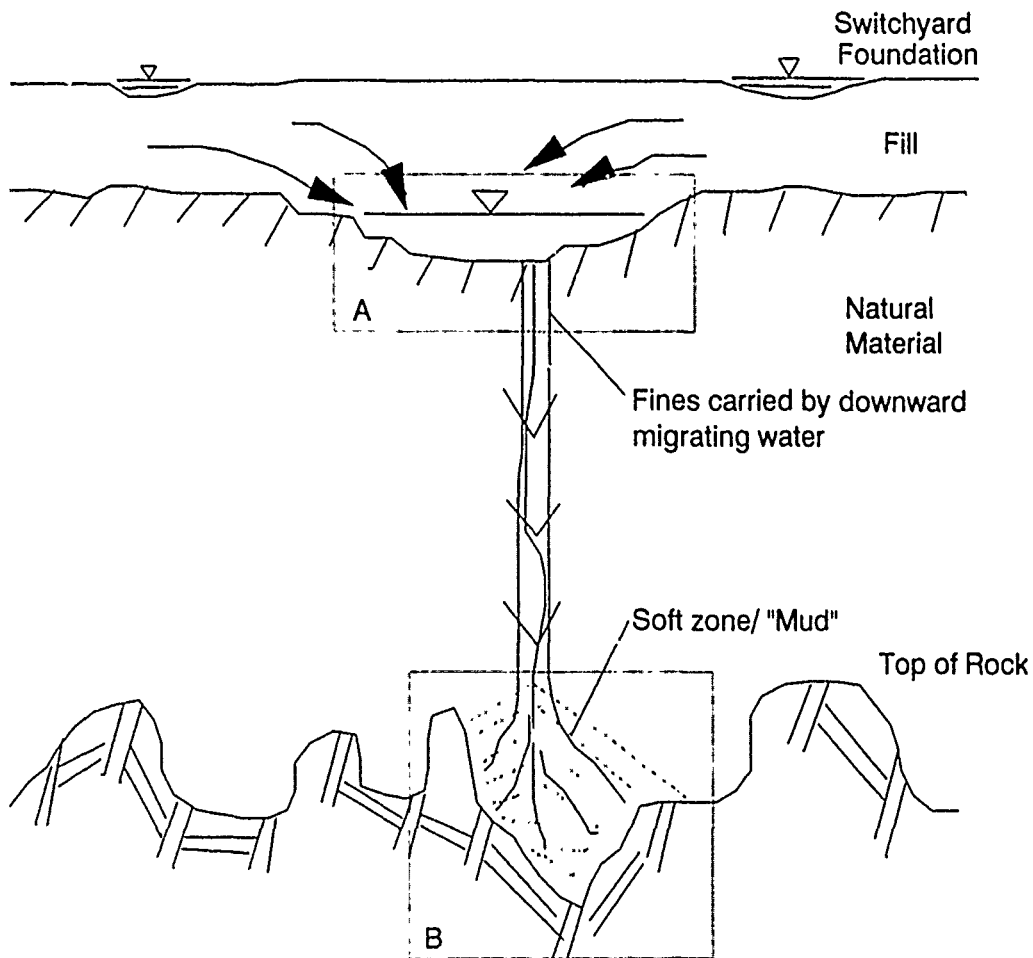
2. In 1974, a cavity was discovered in foundation fill material beneath the upstream switchyard of Wilson Dam powerplant. The cavity was about 10 ft* in diameter, extended to within 2 ft of the surface, and was manifested by a surface depression. After filling the cavity with concrete, subsequent exploratory drilling encountered no further cavities beneath the original cavity and above the top of rock. Rock (limestone) was encountered at depths of 38 to 57 ft. Cavities up to 1-1/2 ft in vertical extent were

* A table of factors for converting non-SI units of measurement to SI (metric) is presented on page 4.

encountered in the limestone. Concern about the possible existence of other cavities beneath the upstream as well as the downstream switchyard led to a geophysical investigation of the switchyards to detect anomalous foundation conditions. Although other geophysical methods were considered and even field tested (resistivity and seismic methods), microgravity surveying emerged as the only viable geophysical method for application under the severe constraints posed by the above- and below-ground features in the switchyard.

3. In September 1983, WES conducted a microgravity survey of the Wilson Dam powerplant switchyards. Due to maintenance activities in the upstream switchyard, only a limited survey was possible in the immediate vicinity of the known, filled cavity. The survey consisted of 265 gravity stations in the downstream switchyard and 23 stations in the upstream switchyard. The report on this work (Butler and Yule 1984) presents a gravity anomaly map with several anomalies identified that were prioritized for a verification drilling program. Negative anomalies, which might represent gravity signatures of cavities, were interpreted to give probable depth ranges and maximum depths for the subsurface feature causing each anomaly. Of the 16 borings placed to investigate anomalous conditions, 4 encountered a mud (saturated) zone above the top of rock, 1 encountered a soft zone at a depth consistent with the gravity interpretation, and 1 encountered a significant zone (about 30 ft thick above the top of rock) described as "very soft, possible void." The remainder of the borings, including three placed in positive anomaly areas, were described as encountering no voids. Most of the holes were placed with a power auger, which made it difficult to determine the actual condition of subsurface materials, although true voids should have been evident.

4. Results of the microgravity survey and the verification drilling program led to a postulated mechanism for the formation of cavities in the foundation fill material. The microgravity survey detected well-defined negative (low) gravity anomaly areas, indicative of localized low density conditions in the subsurface. The verification drilling program detected noticeably "soft" zones during drilling and in several instances encountered "mud" zones ranging from 2 to 10 ft just above the top of rock. These results suggest the conceptual model shown in Figure 1, where the low gravity anomalies are produced as a result of piping of fill material downward by infiltration of water collecting in shallow surface depressions or water seeping from localized leaks (cracks) in concrete-lined channels and conduits. The water and sediment collect in grikes or depressions of the pinnacled



MODEL:

- 1) During rainfall, water is "ponded" in depressions.
- 2) This water then flows into a subsurface feature "A" which has a flow path to the bedrock.
- 3) Fines are carried downward by groundwater.
- 4) Softzone or "mud" is formed at top of rock and a void begins to form at depression "B". This means A and B could be the start of a cavity formation.

Figure 1. Proposed mechanism for cavity formation in switchyards

limestone surface and eventually find their way into the solution-widened fractures and joints and cavities of the karst "drainage system" of the limestone.

5. There is still concern over the possible existence of cavities beneath the upstream switchyard, heightened by the formation of shallow surface depressions where water collects for short periods after each rainfall. This concern led to the microgravity survey of the upstream switchyard documented in this report. The TVA requested the present survey in order to rationally plan subsurface exploration for the detection of cavities in the switchyard foundation. Drilling in the switchyards is hazardous due to the dense network of overhead structures (including high voltage cables) and underground conduits. Thus, now, as was the case for the prior drilling program in the downstream switchyard, random drilling is ill-advised and rational placement of boreholes is a must.

Survey Details and Field Procedures

6. The general location of the switchyard and survey grid is presented in Figure 2. This figure also shows the grid coordinate system used in the data plots and its correlation with the land survey coordinate system. The survey grid was established and elevations determined by a TVA survey team, and the microgravity measurements were performed by WES personnel. The grid consisted of 347 stations. At each station a 2- by 2-in. stake was driven flush with the ground surface. Elevations of the top of the stakes were determined with an accuracy of 0.01 ft. A basic grid dimension of 10 ft. was used in the interior of the area, around all major structures, and modified as required by locations of concrete foundation pads and cable trenches; in the easternmost portion of the area, the grid dimension was increased to 20 ft. Figure 3 shows the survey grid superimposed on a simplified map of the upstream switchyard which shows locations of the major features. Figure 4 is a view of the upstream switchyard showing the survey grid. The aboveground stakes are offset from the station location, are labeled with station coordinates, and allow rapid station location during the micro-gravity survey. Station L8, coordinates (x,y:100,110), was established as the gravity base station.

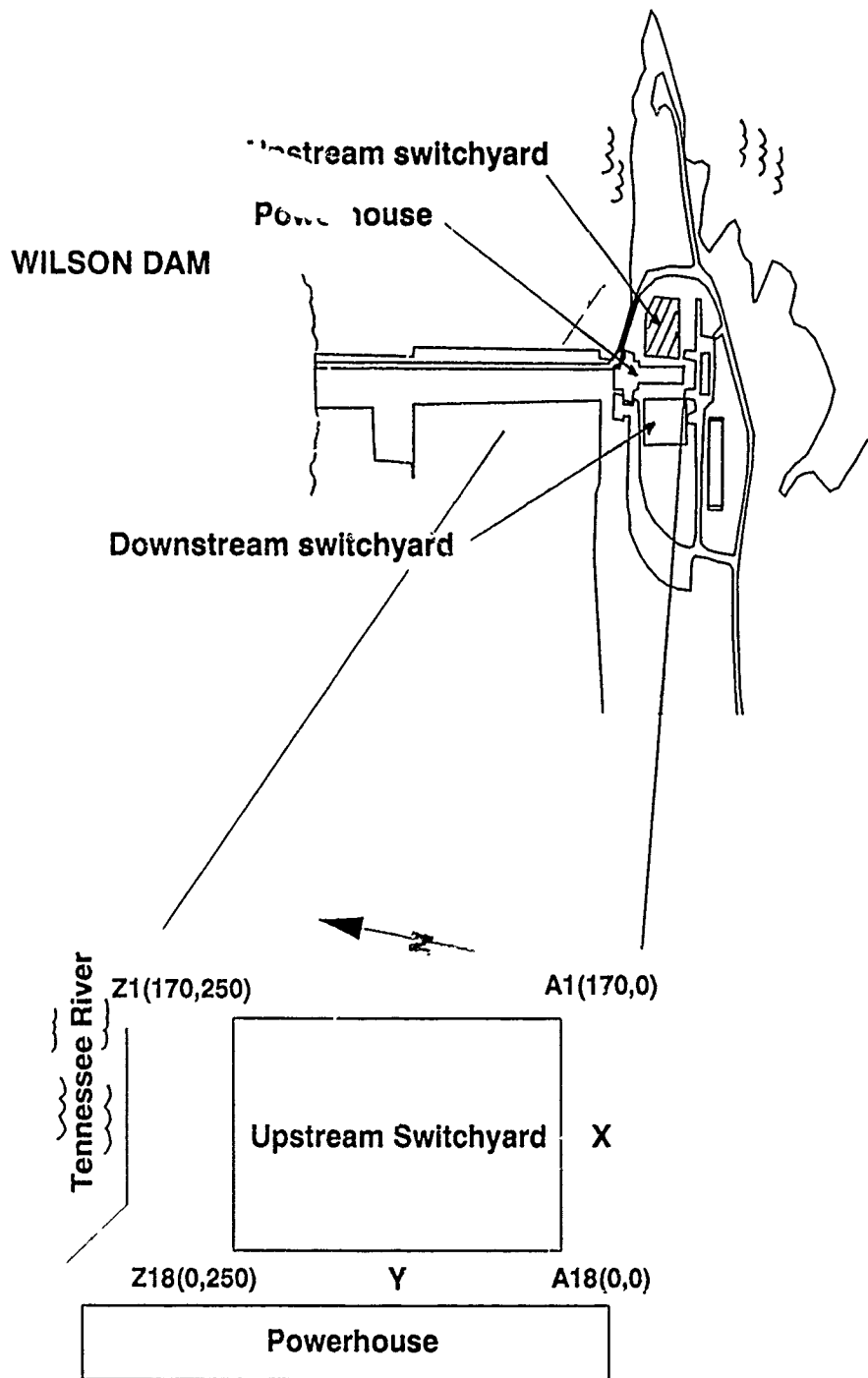


Figure 2. Location and general layout of survey grid

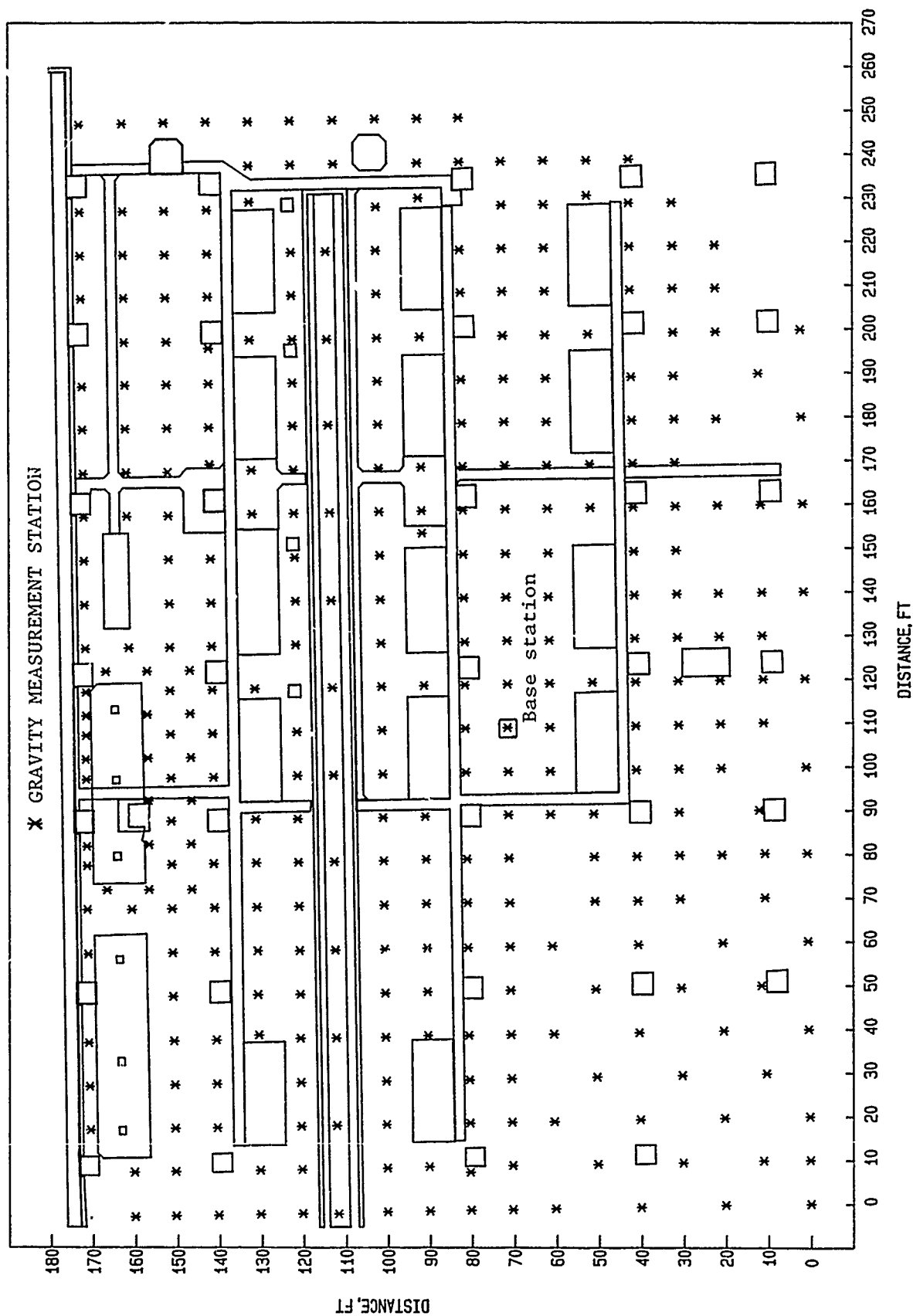


Figure 3. Gravity measurement stations for upstream switchyard survey

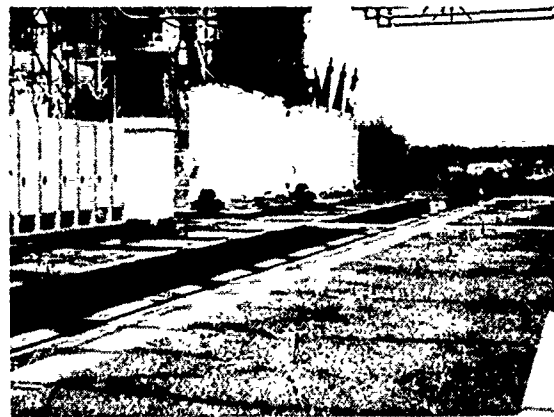
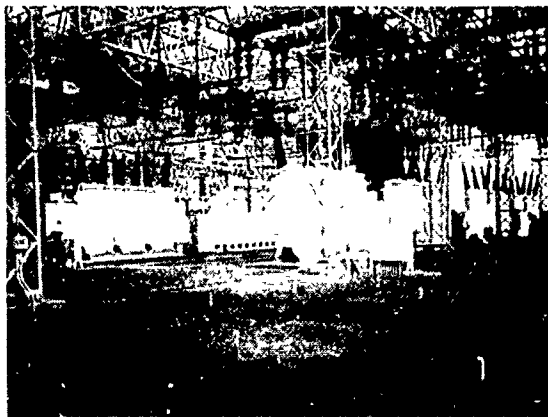
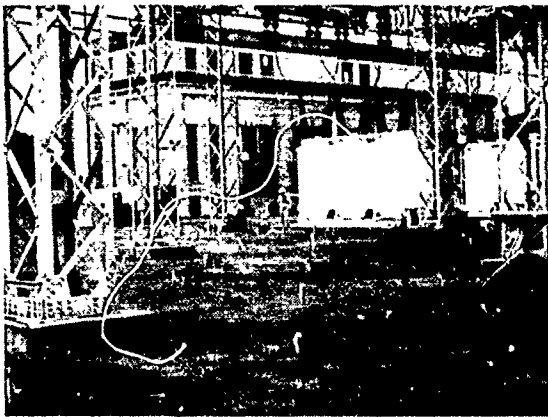


Figure 4. Views of upstream switchyard survey grid

7. Details of microgravity survey field procedures are given in Butler (1980) and Butler and Yule (1984) and will only be briefly summarized here. The survey was conducted in "zigzag" segments or loops called programs. A program consists typically of 6 to 10 gravity station measurements between two successive occupations of the base station. Each program was completed in 30 to 45 min. Base station reoccupations are used to correct the survey data for time-varying gravity values due to earth tides and instrument drift. A concave gravity meter baseplate was installed at the base station and left in place during the entire survey. A separate baseplate was used for all other measurements. Each program typically includes one or more stations that were occupied during a previous program. During the upstream microgravity survey 33 percent of the stations were reoccupied (two or more measurements). Comparison of the repeat values, after correction for the factors described in the following section, allowed the quality and accuracy of the data to be monitored during the course of the survey. The data acquisition required 5 days.

Data Corrections

8. Required corrections to gravity data are thoroughly discussed in Butler (1980). Briefly, the corrections are necessary due to time variations of gravity, latitude and elevation differences between stations, and the effects of topographic features. If all the corrections are properly applied, variations in gravity values, on a corrected gravity contour map for example, will be due solely to variations in subsurface conditions beneath the survey area.

Meter factor

9. The meter factor for LaCoste and Romberg Model D-130 gravimeter used for the survey is 1.08008. Multiplying each gravity measurement by the meter factor converts the value from meter units to gravity units, mGal, where $1 \text{ Gal} = 1 \text{ cm/s}^2$; $1 \text{ mGal} = 10^{-3} \text{ Gal}$. Strictly speaking, the meter factor multiplication is not a correction, but it is a necessary step in the data processing sequence.

Correction for time variation

10. Gravity variations with time for the entire site is assumed to be the same as at the base station. All gravity measurements in a program are corrected for time variations by linear interpolation using the base station

values at the beginning and end of the program. The quality and consistency of the base station time variations are determined by comparison to theoretical and measured earth tide variations for the site. Theoretical earth tide variation was computed in advance for the period of the field work. During the field work, a measured earth tide was obtained by connecting the gravity meter to a chart recorder, securing the gravity meter in a locked shed on site, and recording the earth tide each night.

Latitude correction

11. The latitude correction compensates for the normal variation in gravity over the Earth in a north-south direction. A reference latitude of 34.5 deg is used for the site. The correction that is then applied to the data is $0.23 \mu\text{gal}/\text{ft}$ north-south distance from the base station, where the correction is subtracted if a station is north of the base station and added if a station is south of the base station.

Free-air correction

12. The free-air correction accounts for the normal variation of gravity with elevation, and for small-scale surveys the correction is made relative to the elevation of the base station. The correction is given by $94.04 \times h' \mu\text{gal}$, for h' in feet, where h' is the elevation difference of a station relative to an elevation datum, which is chosen to be the base station elevation. If a station is higher in elevation than the datum, the correction is added, and subtracted if lower.

Bouguer correction

13. The Bouguer correction accounts for the fact that there are differing masses of material beneath stations due solely to elevation differences. The correction is calculated using $12.77 \times D \times h' \mu\text{gal}$ where D is the bulk density of the near surface materials in grams per cubic centimetres and h' is the elevation difference in feet between the gravity station and a reference datum. For this survey, a bulk density of $1.8 \text{ g}/\text{cm}^3$ is used, and the elevation of the base station is chosen again as the datum elevation. If a station elevation is above the datum, then this correction is subtracted and added if lower.

Terrain correction

14. Terrain correction compensates station gravity values for the attraction of nearby topographic variations and other terrain features. Within the upstream switchyard gravity grid area, the only terrain corrections that must be considered are for the transfer track trench and the aboveground

switchyard structures. During the previous gravity survey of the downstream switchyard, careful consideration was given to the terrain effects of the switchyard structures. Gravity measurements were made around one of the transformers in an effort to detect its gravity effect, gravity anomalies were calculated for a simple model of a transformer, and an overlay of the "non-terrain corrected" gravity anomaly map and a switchyard structure location map was examined for correlations. These efforts indicated that the effect of a transformer on gravity measurements is less than 5 μGal for distances greater than 10 ft from the base and that the net effect of the dense assemblage of structures must be approximately constant over the interior of the survey grid, since there is no correlation between structure locations and gravity anomalies.

15. Outside the survey area, there are significant topographic variations that cannot be ignored. There are large drop-offs on the north and east boundaries of the survey area. As demonstrated in the previous work for the downstream switchyard, this type topographic variation can be treated as a component of the local regional field variation and corrected in a regional/residual field separation step (Butler 1980). The local regional field can be determined by row and column data averaging, polynomial surface fitting, or by modeling (Butler and Yule 1984, Butler 1985). This procedure for the upstream switchyard survey is discussed in the next section. In the geophysical literature, the following terminology is used:

- a. Bouguer gravity anomaly map--gravity data corrected for the factors in paragraphs 9-14 plus the terrain correction.
- b. Residual gravity anomaly map--the "remainder" after a regional gravity map field component is removed (subtracted) from the Bouguer gravity data.

The procedure used here effectively accomplishes the terrain correction and regional field removal in a single step.

Data Processing

16. Gravity data processing is computational intensive because of the many corrections made and unwanted influences that must be removed. Currently, with the advent of powerful field portable microcomputers, personal workstations, and software, these obstacles have been overcome allowing the microgravity method to be a feasible and important engineering geophysical tool. A software system has been under development at WES that has

facilitated the data processing for this study.* Processing of the raw or measured gravity data can be divided into two stages, field processing and office processing. A flowchart presenting the procedure for data correction and processing is presented in Figure 5.

Field processing

17. Because of the necessary high accuracy and precision of the gravity measurement at each station, stringent controls during the data collection phase are employed to ensure that a good data set is obtained. The field processing is composed of applying the normal corrections to the gravity readings, compiling a master grid of all the readings, and plotting these values on a grid map. This map is then inspected for agreement of repeat measurements and anomalous high or low readings. This procedure is instituted daily to allow modifications of the data collection programs to investigate inconsistencies in the data. The results of the field processing stage, collected data and the applied corrections, are presented in program segments in Appendix A.

Office processing

18. The office processing phase consists of final processing of the master grid and applying the terrain correction and site-regional residual removal. The end product of this step is called the residual gravity map. The residual gravity map is used for anomaly selection and interpretation. The first step in the office processing is to process the master grid developed in the field. This is done through an interactive on-screen procedure that allows moving through the grid stations, in which all data and their source programs and those of their neighbors are viewed. For each station, options exist to average, select, or correct the station values, out of which one value is then written to a final grid file, which reduces the data set to one gravity value for each measurement station. It is this data set that is used in subsequent data processing.

19. The next step involves removing the effects of the local regional gravity field component and surrounding terrain effects. There are several methods available to accomplish this task. A direct approach is to analytically calculate the mass effects of surrounding terrain and shallow

* Donald E. Yule and Michael K. Sharp, 1989, "GRAVD: Gravity Data Collection and Analysis Software," Open File-Draft Report, "S Army Engineer Waterways Experiment Station, Vicksburg, MS.

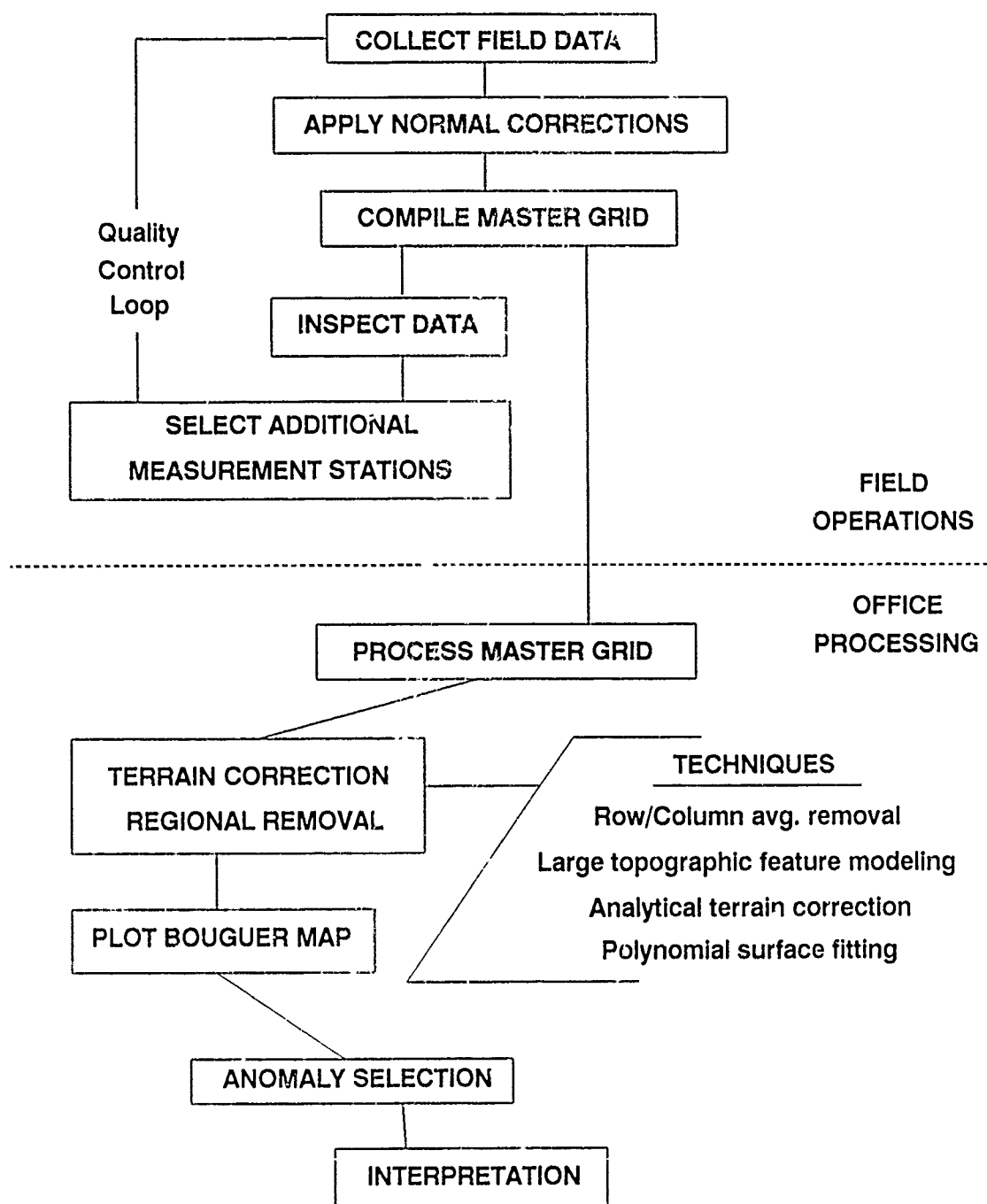


Figure 5. Gravity survey data correction and processing flowchart

geologic structure for each measurement station. While these methods are the most direct and rigorous, they require additional elevation data to define the surrounding terrain and much detail of the geologic structure below and around the survey area, which is difficult to obtain. Another approach, which relies only on the gravity data set, is possible if there is a heavily populated, uniformly distributed data set for the survey area. With sufficient data, "best-fitting" surfaces can be generated for the Bouguer gravity map. Correcting the gravity data by removing a "best-fitting" surface through the data accomplishes the local regional-residual separation and corrects for effects of terrain outside the survey area. The degree of the surface removed from the data determines the spatial wavelengths of the anomalies that will be removed and which will be passed. It is desirable to remove spatial wavelengths of the order and greater than the survey grid dimensions from the residual gravity map. Since the spatial wavelength is proportional to the depth of the causative subsurface feature, these procedures result in a residual map that contains gravity anomalies caused predominantly by subsurface features shallower than the mean survey area dimension in depth.

20. A first-order approach to define and remove the site regional and correct for nearby terrain is to use row and column average removal technique. This is a good first approach and works well if the regional has components that are broad and well defined in one direction, especially if the direction coincides with a grid axis. This approach was successfully implemented in the removal of the river bluff effect in the survey of the downstream switchyard. However, "corner effects," anomalous areas generated at the corners of the grid, were noticed as a result of this type regional separation for the upstream switchyard data set. This results from the coupling effect of removing two dependent parameters, row and then column averages derived from the same data set. The "corner-effects" are easily recognizable.

21. A more sophisticated and versatile approach is to model the gravity data with a surface defined by a polynomial function in place of row and column averages. Recent advances in efficient algorithms for determining polynomial surface fits to spatial data have made these computations rapid and accessible to microcomputers (Balch and Thompson 1989). This approach is advantageous in that it does not have the limitations discussed above. This method can account for more complicated regional field geometries with no preference to regional features aligned with the grid axes. Also, the amount

of filtering or detail of the measured gravity surface that will be removed can be easily adjusted by varying the degree of the polynomial equation that is used to fit the regional surface.

22. After the regional separation step is accomplished, the resulting residual gravity map is studied to identify anomalies. This is a judgmental phase in which relative high and low gravity areas are selected for subsequent investigation. It should be noted that the resulting anomalies, particularly their magnitudes, are a function of the selected regional surface fit. The regional surface defines the local reference level over the site from which depart relative high and low gravity areas. However, if the anomalies are detectable, the possible error caused by selecting an arbitrary reference surface is to incorrectly estimate the size and depth of the subsurface feature causing the anomaly; the xy(plan) location of the feature is relatively unaffected.

Data Presentation

23. Data presentation is accomplished in two forms: two-dimensional (2-D) contour maps of the gravity data and three-dimensional (3-D) representations of the 2-D contour maps. The 3-D plots are important for obtaining a general perspective of the surface trends and also provide a more visually receptive display of the data. These plots also provide a view that is helpful in discerning anomalies from a complex regional gravity field. With the introduction of these 3-D plots, the viewing angle is important to orient the observer to enable comparisons with other views and plots. This is accomplished by a legend on each plot which consists of a small inset square box representing the grid. The legend displays the viewing angle with a line extending into the legend grid in the appropriate viewing direction. The 2-D contour plots are best suited for anomaly selection, location, and magnitude determination. A color mapping scheme has been employed when appropriate to enhance the data presentation. Red indicates areas of negative gravity anomalies with negative (-) values of less than $-10 \mu\text{gals}$. Black maps the area of data from -10 to $10 \mu\text{gals}$, which is the area in which readings are close to the background value of 0 and judged to be insignificant. Green mapping represents positive anomaly gravity values greater than $+10 \mu\text{gals}$.

Regional-Residual Field Separation

24. The gravity data were corrected for all normal corrections except the terrain correction, and the resulting data set is given in Appendix A. The master file gravity data set was derived from these data and is plotted in Figure 6. This figure is a stacked 2-D plot on a 3-D plot. The regional and terrain effects are evident as the broad surface trends, and the scattered, relatively small surface deviations are possible gravity anomalies caused by shallow, subsurface density anomalies. The purpose of the subsequent processing is to remove this broad trend, substantial decreases in the gravity to the north and west, and enhance and uncover localized deviations from this overall trend. Two separate methods were employed to accomplish this task, row/column average removal and polynomial surface fitting.

Row/column average removal

25. Row/column average removal, as discussed previously, involves finding the grid row and column averages and then subtracting these quantities from each gravity station. This procedure is done in two steps. First, the longest grid dimension, column averages, is subtracted from each station value using the corresponding column average value. This resulting data set is then processed further by recalculating the row averages and then subtracting these averages from the column average adjusted gravity station value using the corresponding short axis, row average. The intermediate and final results are compared to make sure no major artifacts of processing are introduced. The processing steps and their effects are presented in Figure 7. The original trends in the data, row and column averages, are shown by curves A1 and A2. After the first step, removal of the column averages, curves B1 and B2, the new row and column averages, are plotted. Curve B1 shows that the north-south regional trend has been effectively removed, and curve B2 shows that the east/west trend has been reduced in magnitude, shifted downward on the plot, and smoothed. The curves C1 and C2 reflect the final results and are the result of subtracting the row averages shown in curve B2 from the adjusted gravity station data set, then recalculating the row and column averages, and plotting as curves C1 and C2, respectively. The regional trends have been greatly reduced in magnitude and smoothed. The final curves do show a small increase in scatter, which indicates the possible introduction of processing artifacts in the data. Overall, this technique has been successful in removing the local regional trends and is presented in Figure 8. The

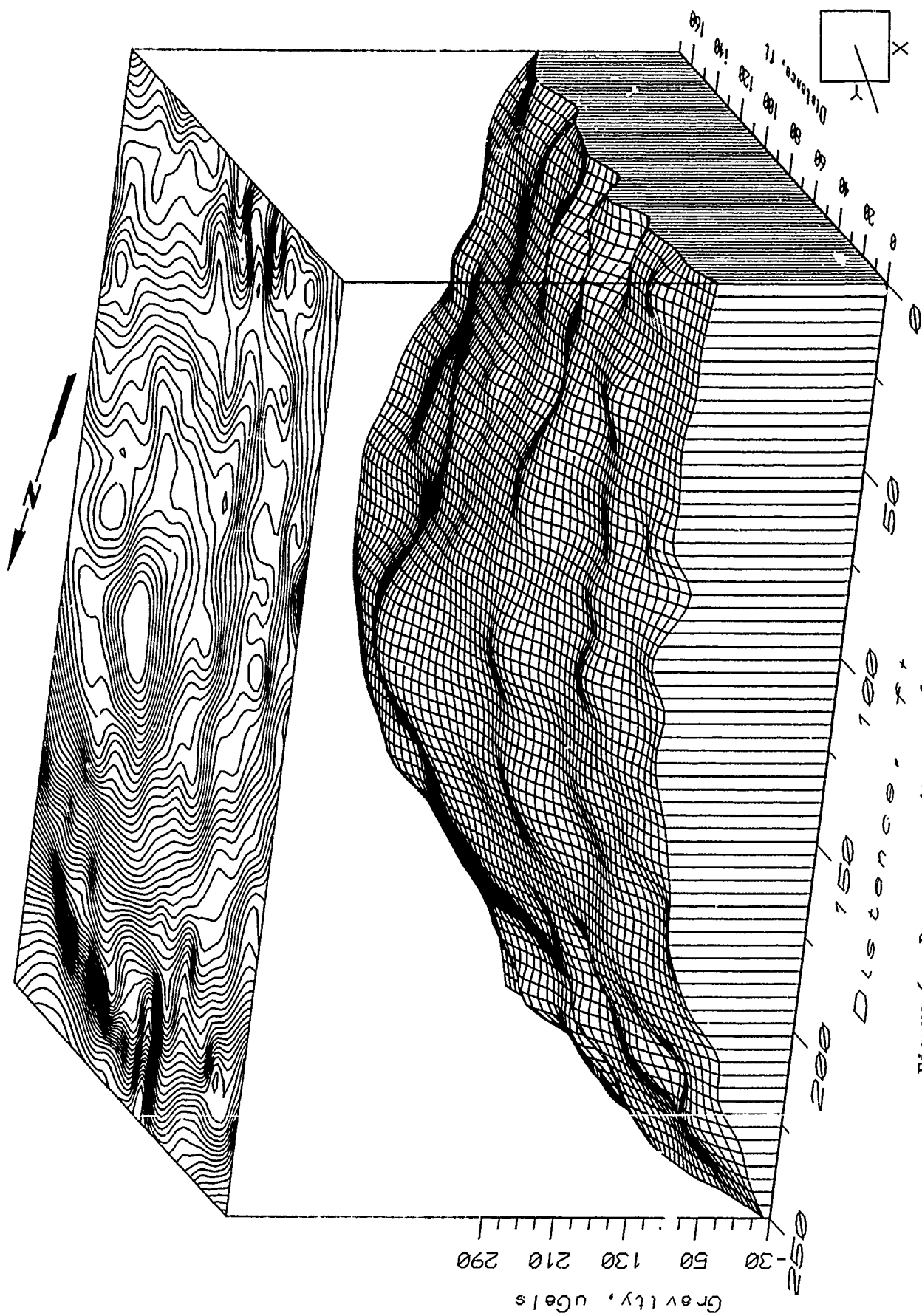


Figure 6. Bouguer gravity map of upstream switchyard

Site Regional Separation Row/Column Average Removal Technique

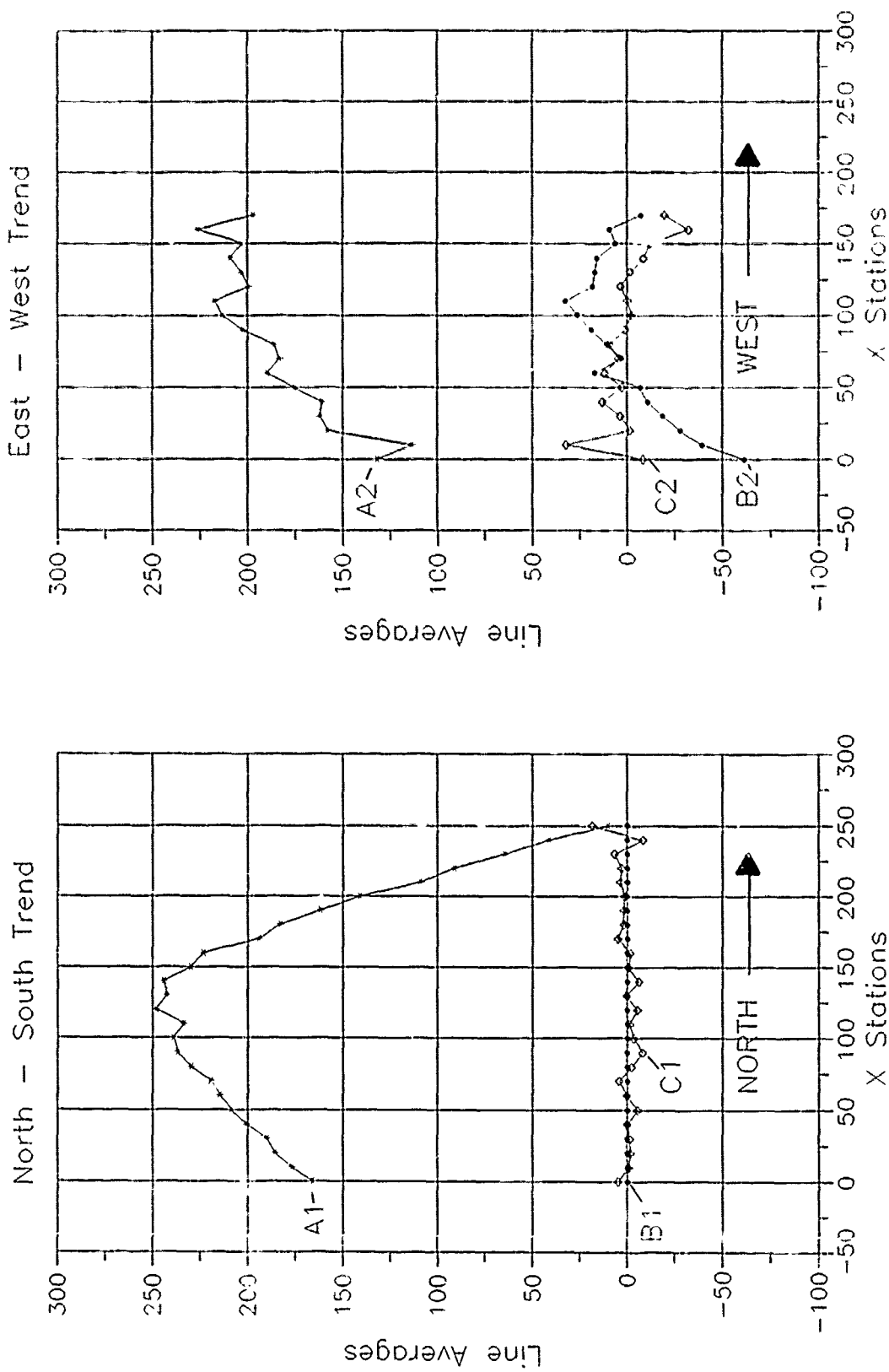


Figure 7. Site regional-residual separation using row/column average removal technique

REGIONAL/RESIDUAL SEPARATION
USING ROW/COLUMN AVERAGE REMOVAL TECHNIQUE

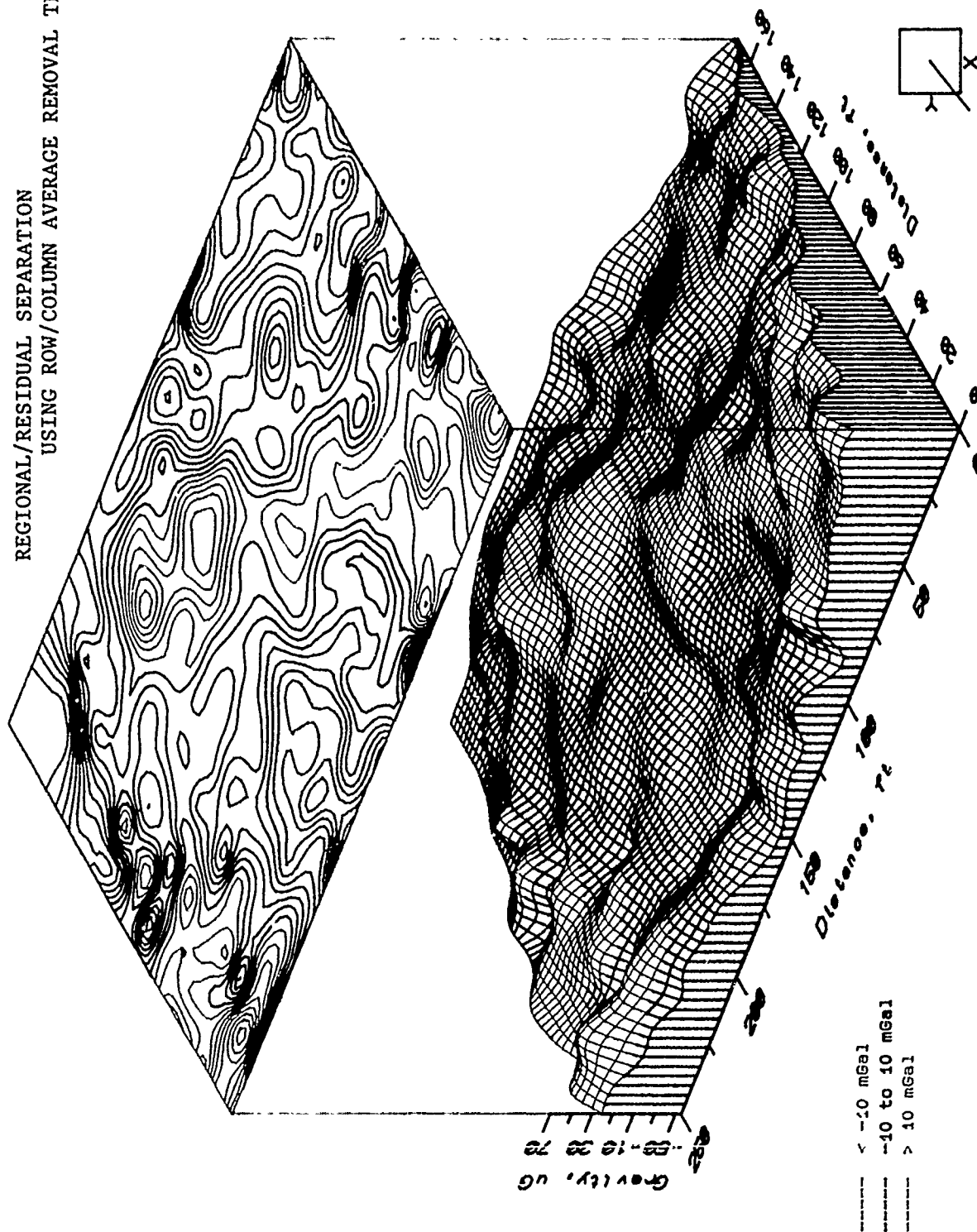


Figure 8. Residual gravity map using row/column average separation technique

resulting gravity plot shows a positive or gravity high ridge that runs southwest to northeast through the grid. There are gravity lows in the southeast and northeast corners which are probably amplified by "corner effects" that were discussed earlier.

Polynomial surface fitting

26. The second method employed to accomplish the local regional/residual field separation was polynomial surface fitting. In this method, a mathematical surface was generated to fit the nonterrain corrected Bouguer gravity data using a polynomial equation of various orders. Because of the nature of the regional surface as shown in the two views, AB and BA, in Figure 9, a third-order polynomial surface was initially postulated. However, fourth- and fifth-order surfaces were also generated to model the regional field. Their calculated degree of fit, 86.5, 90.3, and 90.9 percent, for a third-, fourth-, and fifth-order fit, respectively, which are measures of how well they approximate the original surface, lead to the conclusion that the fourth-order fit is most appropriate. The calculated surfaces to model the regional trend are shown in two views for each surface in Figure 10.

27. The fourth-order residual gravity anomaly map (obtained by subtracting the fourth-order "best-fit" surface (Figure 10) from the Bouguer anomaly map (Figure 9)) is shown in Figure 11. The resulting residual gravity map is similar to the map derived from row/column removal. The major differences are changes in the amplitudes and general appearance of some of the features. Also, the low gravity regions in the corners have been reduced in size. The high ridge running diagonally is still evident, but the broad low region along the west grid boundary has been removed. There are two strong negative regions on the east boundary. These results will be used in conjunction with the row/column average removal results for anomaly selection and assessment.

Anomaly Selection and Assessment

28. Anomalous zones were identified based on whether they exceeded a threshold level (± 10 μ gals), possessed areal coherency, and were unexplained. Rankings of anomaly importance were based on the following considerations: location near critical structures or the known past sink hole and anomaly sense. A negative residual gravity anomaly could be caused by subsurface cavities whether air, water, or clay filled if it is within rock.

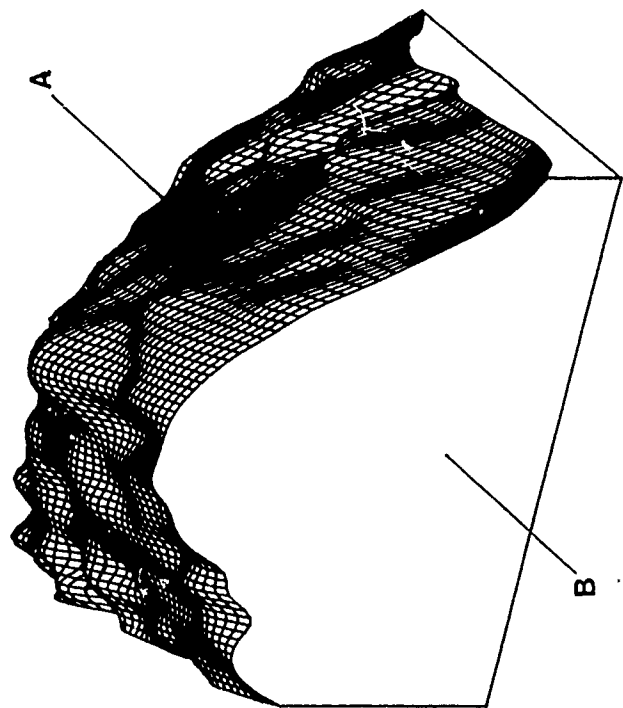
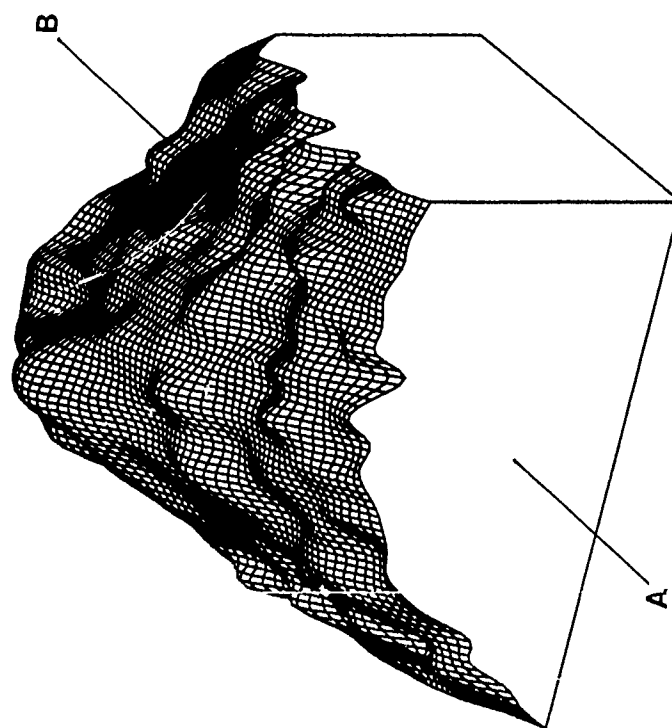
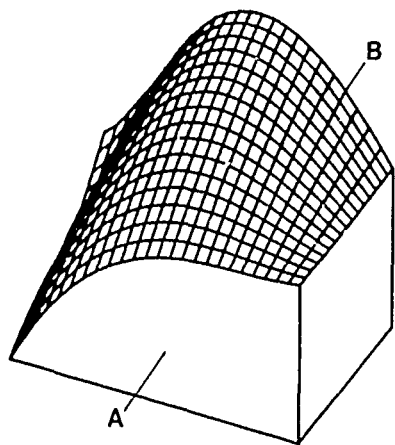
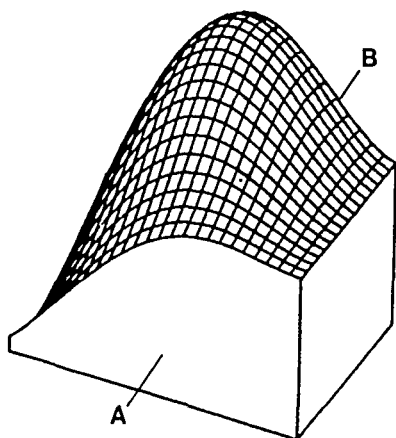
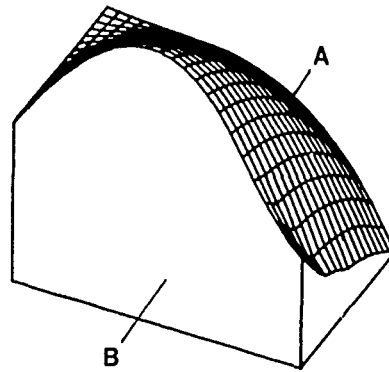


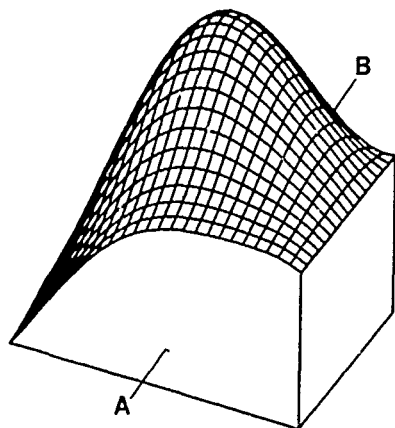
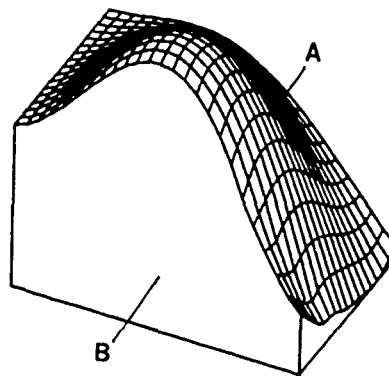
Figure 9. Presentation of site gravity surface before site regional-residual separation



3rd Order Fit (Fit = 86.5%)



4th Order Fit (Fit=90.3%)



5th Order Fit (Fit=90.9%)

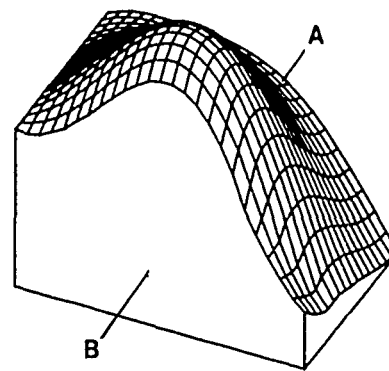


Figure 10. Polynomial surface fit models
for the site regional field

Furthermore, low density areas relative to normal foundation conditions could indicate weak foundation conditions or incipient cavity formation. Therefore, negative anomalies are of critical interest for this survey, whereas verifying the positive anomalies are useful in determining the correctness of the data processing and help in explaining general subsurface conditions. Further emphasis is attached if both methods of regional/residual field separation show the same anomalous feature.

29. The residual gravity maps with anomalous zones delineated and suggested investigation positions annotated are presented in Figures 12 and 13 for the row/column average removal and polynomial surface fitting techniques, respectively. The anomaly areas have been prioritized into class "A"-highest and "B"-secondary. All class "A" are negative anomalies while class "B" includes one (B2) positive anomaly.

- a. A1--This negative anomaly was selected because of its location near the old sinkhole location. This anomaly is evident from both separation techniques.
- b. A2--This low region was picked because of its location near critical structures and area A1. Two exploratory locations were recommended because of its size and the two distinct negative expressions shown in Figure 12. This anomalous region was removed when processed using polynomial surface fitting and is seen in Figure 13 as within the background range of $0 \pm 10 \mu\text{gals}$.
- c. A3--This region was chosen because of its significant areal extent and relatively high negative amplitude. Two exploratory locations were recommended based upon the row/column average separation method (Figure 12). This area is again strongly evident after the polynomial surface fitting technique (Figure 13). This latter processing suggests that the location of one of the investigative areas be moved slightly southwest to coincide with the plan location of the maximum anomaly.
- d. A4--This low region appeared as the result of the polynomial surface fit regional separation (Figure 13). Because this area extends into the grid, it does not have the appearance of a "corner-effect" and therefore is ranked as a category "A."
- e. B1--This negative region was given a lower ranking because of its location near the corner of the switchyard and the difficulty of accurately removing the terrain effects for this type geometry. This effect is evident in the 160, 250 grid corner. Processing using a polynomial surface fit has reduced the size of this region leaving negative anomalies along the edges of the survey grid.
- f. B2--This positive anomaly was selected to verify and explain the trend of high gravity values extending diagonally across the

REGIONAL/RESIDUAL FIELD SEPARATION
USING POLYNOMIAL SURFACE FITTING TECHNIQUE

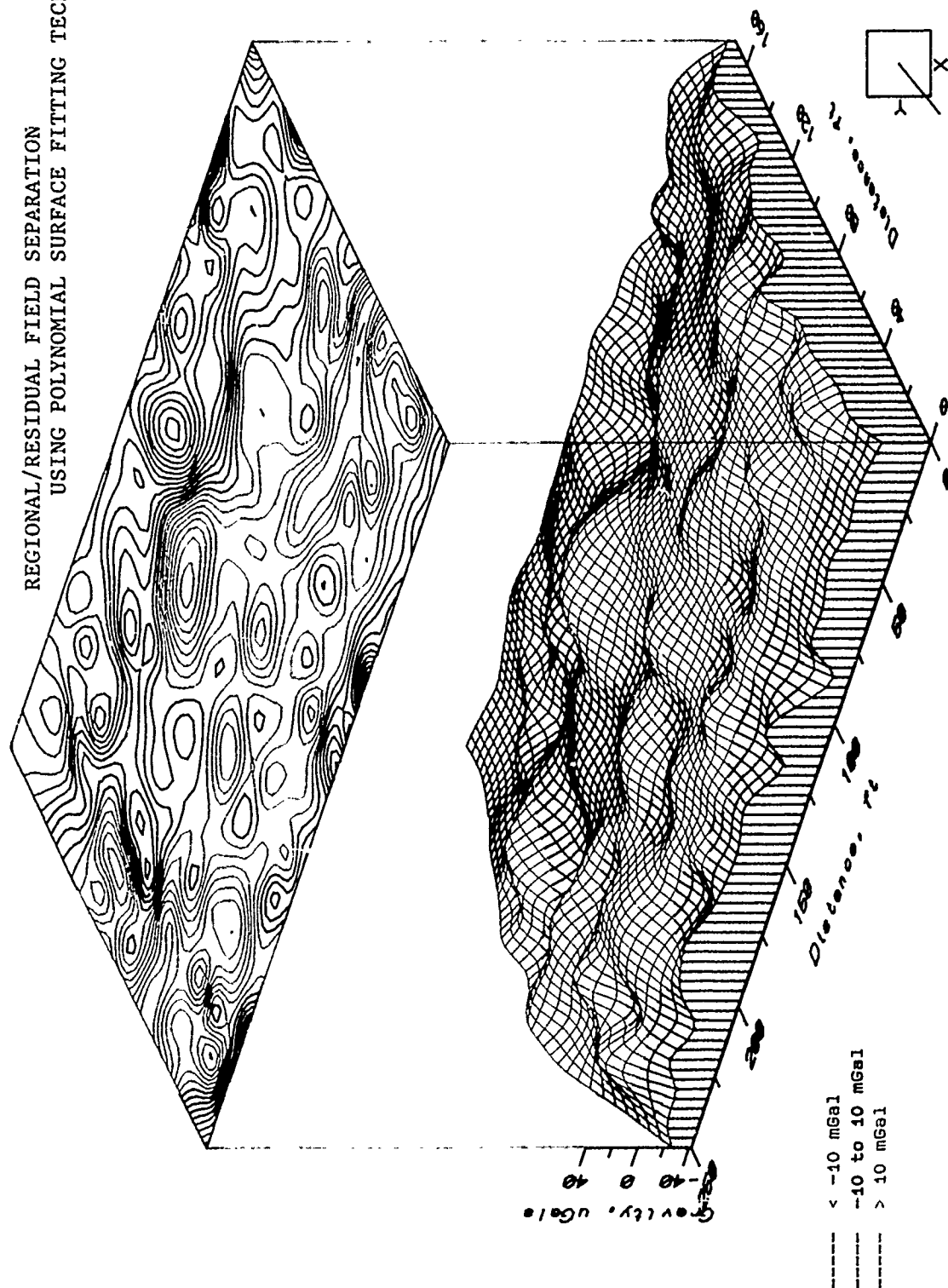


Figure 11. Residual gravity map using polynomial surface fitting separation technique

RESIDUAL GRAVITY MAP

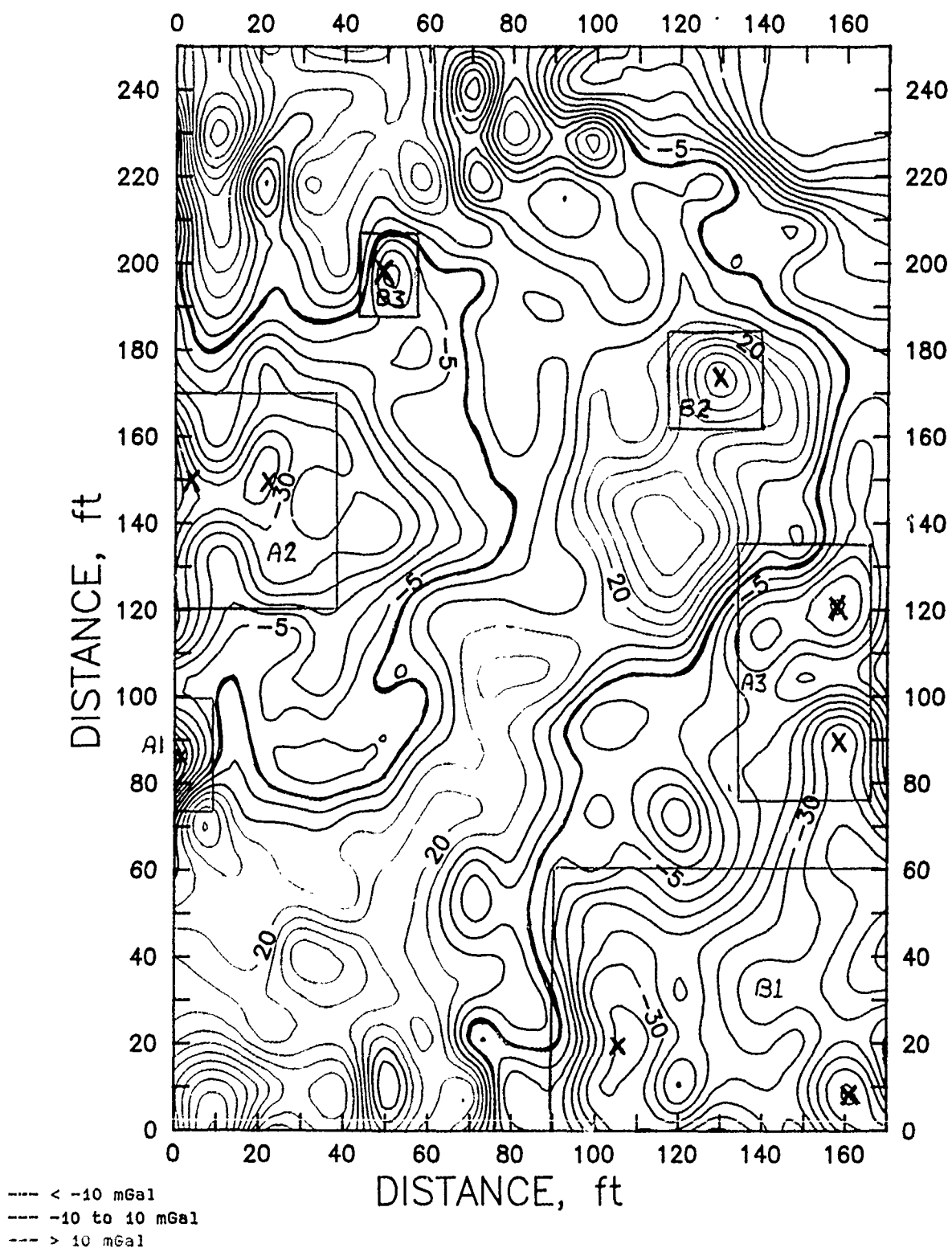


Figure 12. Anomaly selection in upstream switchyard. Regional-residual field separation using row/column average removal techniques

grid. However, the alternate processing technique places the location of a high to the southwest. This adjusted location is better because it appears on both residual maps.

- g. B3-This anomaly was selected because it was negative but was given a low priority because of its small area and low magnitude as shown in Figure 12. This feature is again present in Figure 13, but its magnitude has been raised within the selected background range of 0 ± 10 μ gals after the polynomial surface processing.

Several anomalous zones were not recommended for initial investigation because of their noncritical nature, such as the high positive region centered at (x,y:7,235), or because they can be explained, such as the negative anomaly at (x,y:70,240) caused by the cable pit beneath that area.

30. All of the closed contour anomalies identified above are caused by shallow density anomalies. It is difficult to compute depths for individual gravity anomalies since there is considerable superposition of anomalies. Depth for the feature producing the positive anomaly, B2 (x,y:110,140) is computed to be approximately 25 ft. The depth calculated for the negative anomaly, A2 (x,y:25,150) is approximately 27 ft. It is unlikely that any of the closed contour anomalies are caused by features deeper than 30 ft. Most anomalies, such as A1 and B3, are caused by shallower features, likely less than 15 ft in depth. It is suggested, however, that exploratory borings be drilled to the top of rock, as was done in the downstream switchyard and as suggested by the model in Figure 1.

Conclusion

31. A microgravity survey was conducted in the upstream switchyard of the powerplant during August 1989. The objective of the survey was the detection of subsurface cavities or other anomalous conditions that could threaten the integrity of the switchyard. The normal corrections were first applied to the gravity measurements as a field processing step in conjunction with monitoring data quality and inspection for inconsistencies. The data collection scheme was continually updated based on this information allowing the collection of a coherent and complete data set. The terrain correction and regional-residual field separation processing was accomplished jointly using two techniques, row/column average removal and polynomial surface fitting. Six anomalous areas (A1, A2, A3, B1, B2, B3) were identified on the residual gravity contour map, and nine exploratory locations were selected

RESIDUAL GRAVITY MAP

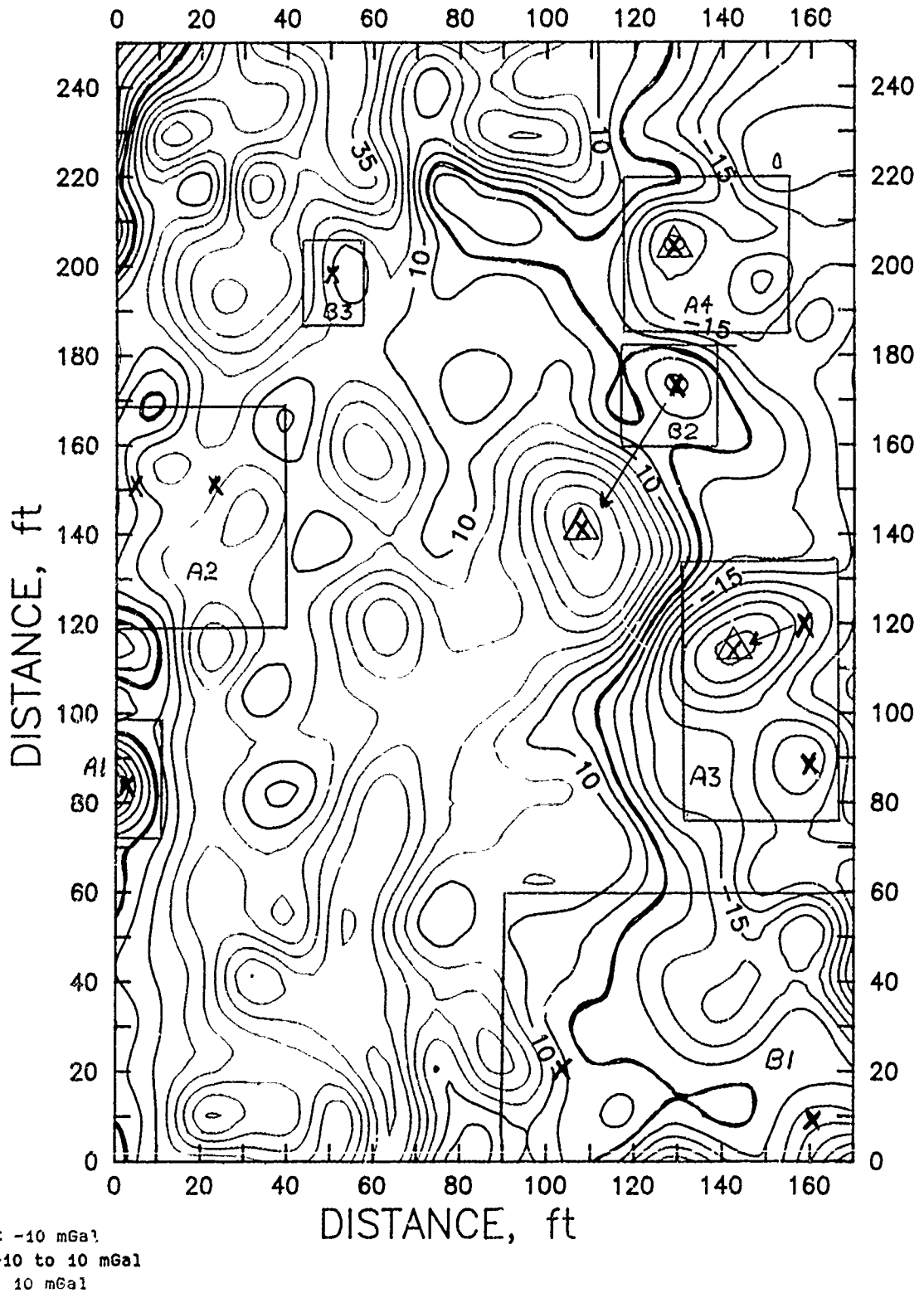


Figure 13. Anomaly selection in upstream switchyard. Regional-residual field separation using polynomial surface fitting techniques

based on the row/column average separation technique (Figure 12). Subsequent processing using the polynomial surface fit procedure added a seventh anomalous area with one additional exploratory location chosen, A4 (Figure 13). There was relatively good agreement between the two final processing techniques with two exploratory location adjustments recommended. The polynomial surface fit technique did not show the strong negative areas A2 and B1, but it would be unconservative to discount their existence. While the selected, localized gravity anomalies are consistent with the existence of shallow cavities, other subsurface conditions can equally well explain the anomalies. Only direct subsurface investigation can confirm the presence of cavities. However, the absence of negative gravity anomalies in an area is a positive indicator of the absence of cavities. The recommended exploratory drilling program is a minimum plan, and if these negative anomalies are indeed cavities, then a closer inspection of the anomaly map should be undertaken to select additional exploratory locations.

References

Balch, Stephen J., and Thompson, Garth T. 1989. "An Efficient Algorithm for Polynomial Surface Fitting," Computers and Geosciences, Vol 15, No.1, pp 107-119.

Butler, Dwain K. 1980. "Microgravimetric Techniques for Geotechnical Applications," Miscellaneous Paper GL-80-13, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

_____. 1985. "Topographic Effects Considerations in Microgravity Surveying," in Proceedings of International Meeting on Potential Fields in Rugged Topography, IGL Bulletin No. 7, Institute de Geophysique, University de Rausanne, Switzerland, pp 34-40.

Butler, Dwain K., and Yule, Donald E. 1984. "Microgravity Survey of Wilson Dam Powerplant Switchyards, Florence, Alabama," Miscellaneous Paper GL-84-16, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

Tennessee Valley Authority. 1989. "Wilson Project, Upstream Switchyard Subsurface Investigation," Chattanooga, TN.

Appendix A. Wilson Dam Upstream Switchyard
Field Data and Corrected Data

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda1 FILE: wda1.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080189

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) | |
|---------|------------|--------|--------|---------|----------|--------|
| 1 | 100.00 | 110.00 | 549.21 | 9.4 | 4887 | 5278.4 |
| 2 | 90.00 | 30.00 | 549.24 | 9.5 | 4803 | 5212.3 |
| 3 | 70.00 | 60.00 | 549.29 | 9.5 | 4811 | 5219.0 |
| 4 | 110.00 | 40.00 | 549.17 | 9.6 | 4797 | 5203.7 |
| 5 | 100.00 | 70.00 | 549.30 | 9.6 | 4823 | 5236.9 |
| 6 | 50.00 | 0.00 | 549.32 | 9.7 | 4739 | 5167.2 |
| 7 | 100.00 | 50.00 | 549.26 | 9.7 | 4899 | 5326.3 |
| 8 | 70.00 | 60.00 | 549.12 | 9.8 | 4794 | 5203.4 |
| 9 | 130.00 | 80.00 | 549.21 | 9.8 | 4827 | 5243.4 |
| 10 | 100.00 | 110.00 | 549.21 | 9.9 | 4863 | 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|--------|------|--------|-------|-------|----------|
| 4817.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4803.00 | -3.70 | 0.00 | 80.00 | 18.44 | 2.48 | 5212.25 |
| 4811.00 | -5.55 | 0.00 | 50.00 | 11.52 | 5.68 | 5219.03 |
| 4797.00 | -9.26 | 0.00 | 70.00 | 16.13 | -2.84 | 5203.69 |
| 4823.00 | -12.04 | 0.00 | 40.00 | 9.22 | 6.39 | 5236.87 |
| 4799.00 | -15.74 | 0.00 | 110.00 | 25.35 | 7.58 | 5167.17 |
| 4899.00 | -17.59 | 0.00 | 60.00 | 13.83 | 3.55 | 5326.28 |
| 4794.00 | -20.37 | 0.00 | 50.00 | 11.52 | -6.40 | 5203.40 |
| 4817.00 | -23.14 | 0.00 | 30.00 | 6.91 | -0.24 | 5243.37 |
| 4843.00 | -25.92 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda2 FILE: wda2.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080189

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) | |
|---------|------------|--------|--------|---------|----------|--------|
| 1 | 100.00 | 110.00 | 549.21 | 9.9 | 4863 | 5278.4 |
| 2 | 70.00 | 30.00 | 549.36 | 9.9 | 4759 | 5200.3 |
| 3 | 50.00 | 40.00 | 549.30 | 10.0 | 4777 | 5217.0 |
| 4 | 50.00 | 0.00 | 549.32 | 10.1 | 4723 | 5173.0 |
| 5 | 30.00 | 20.00 | 549.27 | 10.1 | 4742 | 5189.4 |
| 6 | 50.00 | 70.00 | 549.44 | 10.2 | 4769 | 5224.3 |
| 7 | 20.00 | 40.00 | 549.40 | 10.3 | 4729 | 5191.4 |
| 8 | 110.00 | 40.00 | 549.17 | 10.3 | 4753 | 5205.1 |
| 9 | 100.00 | 110.00 | 549.21 | 10.5 | 4820 | 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|--------|------|--------|-------|-------|----------|
| 4863.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4759.00 | -5.16 | 0.00 | 80.00 | 18.44 | 10.66 | 5200.28 |
| 4777.00 | -9.03 | 0.00 | 70.00 | 16.13 | 6.39 | 5217.02 |
| 4723.00 | -12.90 | 0.00 | 110.00 | 25.35 | 7.58 | 5172.98 |
| 4742.00 | -16.77 | 0.00 | 90.00 | 20.74 | 4.26 | 5189.44 |
| 4769.00 | -21.93 | 0.00 | 40.00 | 9.22 | 16.34 | 5224.32 |
| 4729.00 | -28.38 | 0.00 | 70.00 | 16.13 | 13.26 | 5191.40 |
| 4753.00 | -32.25 | 0.00 | 70.00 | 16.13 | -2.84 | 5205.08 |
| 4820.00 | -46.44 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda3 FILE: wda3.grf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080189

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 10.5 | 4820 |
| 2 | 70.00 110.00 | 549.23 | 10.6 | 4785 |
| 3 | 20.00 80.00 | 549.37 | 10.6 | 4726 |
| 4 | 30.00 100.00 | 549.17 | 10.6 | 4738 |
| 5 | 50.00 40.00 | 549.30 | 10.7 | 4724 |
| 6 | 70.00 40.00 | 549.42 | 10.7 | 4717 |
| 7 | 90.00 30.00 | 549.24 | 10.8 | 4709 |
| 8 | 100.00 0.00 | 549.24 | 10.8 | 4680 |
| 9 | 130.00 60.00 | 549.08 | 10.9 | 4752 |
| 10 | 150.00 60.00 | 549.07 | 10.9 | 4724 |
| 11 | 100.00 110.00 | 549.21 | 11.0 | 4795 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|--------|-------|-------|----------|
| 4820.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4785.00 | -3.97 | 0.00 | 0.00 | 0.00 | 1.42 | 5245.94 |
| 4726.00 | -5.56 | 0.00 | 30.00 | 6.91 | 11.37 | 5200.66 |
| 4738.00 | -8.74 | 0.00 | 10.00 | 2.30 | -2.84 | 5197.98 |
| 4724.00 | -11.12 | 6.00 | 70.00 | 16.13 | 6.39 | 5208.31 |
| 4717.00 | -12.71 | 0.00 | 70.00 | 16.13 | 14.92 | 5210.86 |
| 4709.00 | -14.30 | 0.00 | 80.00 | 18.44 | 2.48 | 5193.68 |
| 4680.00 | -16.68 | 0.00 | 110.00 | 25.35 | 2.13 | 5171.30 |
| 4752.00 | -19.06 | 0.00 | 50.00 | 11.52 | -9.24 | 5226.25 |
| 4724.00 | -21.44 | 0.00 | 50.00 | 11.52 | -9.95 | 5197.68 |
| 4795.00 | -27.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda4 FILE: wda4.grf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 090189

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 11.1 | 4797 |
| 2 | 30.00 60.00 | 549.36 | 11.2 | 4707 |
| 3 | 10.00 70.00 | 549.50 | 11.2 | 4673 |
| 4 | 30.00 30.00 | 549.26 | 11.3 | 4696 |
| 5 | 20.00 40.00 | 549.40 | 11.3 | 4676 |
| 6 | 40.00 60.00 | 549.58 | 11.4 | 4681 |
| 7 | 20.00 80.00 | 549.37 | 11.4 | 4701 |
| 8 | 40.00 90.00 | 549.21 | 11.4 | 4718 |
| 9 | 100.00 110.00 | 549.21 | 11.6 | 4774 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|--------|-------|-------|----------|
| 4797.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4707.00 | -4.44 | 0.00 | 50.00 | 11.52 | 10.42 | 5207.52 |
| 4673.00 | -7.10 | 0.00 | 40.00 | 9.22 | 20.60 | 5181.34 |
| 4696.00 | -10.65 | 0.00 | 80.00 | 18.44 | 3.55 | 5201.90 |
| 4676.00 | -12.42 | 0.00 | 70.00 | 16.13 | 13.26 | 5189.48 |
| 4681.00 | -15.97 | 0.00 | 50.00 | 11.52 | 26.29 | 5206.84 |
| 4701.00 | -17.74 | 0.00 | 30.00 | 6.91 | 11.37 | 5210.69 |
| 4718.00 | -19.52 | 0.00 | 20.00 | 4.61 | 0.00 | 5217.15 |
| 4774.00 | -24.84 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda5 FILE: wda5.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080189

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UG) |
|---------|---------------|--------|------|---------------|
| 1 | 100.00 110.00 | 549.21 | 11.6 | 4774 |
| 2 | 70.00 80.00 | 549.31 | 11.6 | 4727 |
| 3 | 90.00 60.00 | 549.30 | 11.6 | 4703 |
| 4 | 40.00 60.00 | 549.58 | 11.7 | 4664 |
| 5 | 100.00 30.00 | 549.29 | 11.9 | 4651 |
| 6 | 110.00 20.00 | 549.03 | 11.9 | 4658 |
| 7 | 80.00 0.00 | 549.38 | 12.0 | 4612 |
| 8 | 20.00 80.00 | 549.37 | 12.1 | 4676 |
| 9 | 100.00 110.00 | 549.21 | 12.2 | 4753 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGAL) |
|---------|--------|------|--------|-------|--------|---------|
| 4774.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.1 |
| 4727.00 | -1.74 | 0.00 | 30.00 | 6.91 | 7.10 | 5243.1 |
| 4703.00 | -3.49 | 0.00 | 50.00 | 11.52 | 6.39 | 5223.1 |
| 4664.00 | -5.82 | 0.00 | 50.00 | 11.52 | 26.29 | 5203.1 |
| 4651.00 | -12.21 | 0.00 | 80.00 | 18.44 | 5.68 | 5181.1 |
| 4658.00 | -13.96 | 0.00 | 90.00 | 20.74 | -12.79 | 5174.1 |
| 4612.00 | -16.87 | 0.00 | 110.00 | 25.35 | 12.08 | 5157.1 |
| 4676.00 | -19.19 | 0.00 | 30.00 | 6.91 | 11.37 | 5209.1 |
| 4753.00 | -22.68 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.1 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda6 FILE: wda6.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080189

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 14.0 | 4780 |
| 2 | 80.00 50.00 | 549.51 | 14.1 | 4688 |
| 3 | 70.00 20.00 | 549.38 | 14.1 | 4661 |
| 4 | 30.00 30.00 | 549.26 | 14.2 | 4678 |
| 5 | 80.00 10.00 | 549.37 | 14.2 | 4639 |
| 6 | 100.00 30.00 | 549.29 | 14.4 | 4633 |
| 7 | 80.00 60.00 | 549.44 | 14.5 | 4679 |
| 8 | 0.00 0.00 | 549.49 | 14.6 | 4626 |
| 9 | 100.00 110.00 | 549.21 | 14.6 | 4779 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|--------|-------|-------|----------|
| 4780.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4688.00 | -0.11 | 0.00 | 60.00 | 13.83 | 21.31 | 5214.24 |
| 4661.00 | -0.22 | 0.00 | 90.00 | 20.74 | 12.08 | 5182.86 |
| 4678.00 | -0.30 | 0.00 | 80.00 | 18.44 | 3.55 | 5190.47 |
| 4639.00 | -0.38 | 0.00 | 100.00 | 23.05 | 11.37 | 5160.85 |
| 4633.00 | -0.65 | 0.00 | 80.00 | 18.44 | 5.68 | 5144.35 |
| 4679.00 | -0.78 | 0.00 | 50.00 | 11.52 | 16.34 | 5197.91 |
| 4626.00 | -0.92 | 0.00 | 110.00 | 25.35 | 19.89 | 5158.18 |
| 4779.00 | -1.08 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wds7 FILE: wds7.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080189

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|------------|--------|--------|------------------|
| 1 | 100.00 | 110.00 | 549.21 | 14.6 4778 5278.4 |
| 2 | 90.00 | 100.00 | 549.16 | 14.7 4769 5263.9 |
| 3 | 70.00 | 70.00 | 549.41 | 14.7 4725 5245.8 |
| 4 | 80.00 | 50.00 | 549.51 | 14.8 4710 5234.8 |
| 5 | 40.00 | 50.00 | 549.30 | 14.8 4689 5195.3 |
| 6 | 10.00 | 10.00 | 549.63 | 14.9 4638 5170.7 |
| 7 | 110.00 | 20.00 | 549.03 | 14.9 4690 5179.9 |
| 8 | 100.00 | 80.00 | 549.37 | 14.9 4756 5259.3 |
| 9 | 130.00 | 40.00 | 549.17 | 15.0 4704 5195.8 |
| 10 | 130.00 | 20.00 | 549.00 | 15.0 4694 5176.1 |
| 11 | 100.00 | 30.00 | 549.29 | 15.1 4675 5171.6 |
| 12 | 100.00 | 110.00 | 549.21 | 15.1 4799 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|--------|-------|--------|----------|
| 4778.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4769.00 | 1.51 | 0.00 | 10.00 | 2.30 | -3.56 | 5265.87 |
| 4725.00 | 3.78 | 0.00 | 40.00 | 9.22 | 14.21 | 5240.75 |
| 4710.00 | 5.29 | 0.00 | 60.00 | 13.83 | 21.31 | 5234.76 |
| 4689.00 | 6.80 | 0.00 | 60.00 | 13.83 | 6.39 | 5195.64 |
| 4638.00 | 9.07 | 0.00 | 100.00 | 23.05 | 29.60 | 5170.72 |
| 4690.00 | 11.34 | 0.00 | 90.00 | 20.74 | -12.79 | 5179.92 |
| 4756.00 | 13.61 | 0.00 | 30.00 | 6.91 | 11.37 | 5259.26 |
| 4704.00 | 15.88 | 0.00 | 70.00 | 16.13 | -2.84 | 5195.84 |
| 4694.00 | 17.39 | 0.00 | 90.00 | 20.74 | -14.92 | 5176.06 |
| 4675.00 | 19.66 | 0.00 | 80.00 | 18.44 | 5.68 | 5171.57 |
| 4799.00 | 22.68 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wds8 FILE: wds8.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080189

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|------------|--------|--------|------------------|
| 1 | 100.00 | 110.00 | 549.21 | 15.1 4799 5278.4 |
| 2 | 50.00 | 50.00 | 549.25 | 15.2 4756 5227.0 |
| 3 | 20.00 | 10.00 | 549.55 | 15.3 4682 5201.8 |
| 4 | 10.00 | 10.00 | 549.63 | 15.3 4656 5176.6 |
| 5 | 40.00 | 80.00 | 549.47 | 15.4 4690 5184.0 |
| 6 | 70.00 | 50.00 | 549.33 | 15.4 4708 5202.4 |
| 7 | 70.00 | 20.00 | 549.38 | 15.5 4674 5176.2 |
| 8 | 70.00 | 0.00 | 549.29 | 15.5 4674 5174.4 |
| 9 | 130.00 | 0.00 | 548.97 | 15.6 4658 5134.4 |
| 10 | 100.00 | 110.00 | 549.21 | 15.7 4799 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|--------|-------|--------|----------|
| 4799.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4756.00 | 0.00 | 0.00 | 50.00 | 13.83 | 2.84 | 5226.98 |
| 4682.00 | 0.00 | 0.00 | 100.00 | 23.05 | 26.76 | 5201.79 |
| 4656.00 | 0.00 | 0.00 | 100.00 | 23.05 | 29.60 | 5176.55 |
| 4690.00 | 0.00 | 0.00 | 30.00 | 6.91 | 18.47 | 5186.01 |
| 4708.00 | 0.00 | 0.00 | 60.00 | 13.83 | 8.53 | 5202.42 |
| 4674.00 | 0.00 | 0.00 | 90.00 | 20.74 | 12.08 | 5176.16 |
| 4674.00 | 0.00 | 0.00 | 110.00 | 25.35 | 5.68 | 5174.38 |
| 4658.00 | 0.00 | 0.00 | 110.00 | 25.35 | -17.06 | 5134.36 |
| 4799.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda9 FILE: wda9.gpf

BASE STATION (X,Y) 100 110
REFERENCE ELEV. 549.21
DENSITY 1.8
GRID ROTATION 0
METER FACTOR 1.08008
REFERENCE READING 4887
LATITUDE 0343000
LONGITUDE 90.0
DATE 080189

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|------------|--------|--------|------------------|
| 1 | 100.00 | 110.00 | 549.21 | 15.7 4799 5278.4 |
| 2 | 50.00 | 80.00 | 549.50 | 15.7 4725 5223.5 |
| 3 | 80.00 | 40.00 | 549.38 | 15.8 4717 5213.9 |
| 4 | 40.00 | 80.00 | 549.47 | 15.8 4736 5228.4 |
| 5 | 20.00 | 50.00 | 549.38 | 15.9 4715 5204.6 |
| 6 | 0.00 | 30.00 | 549.32 | 15.9 4689 5176.1 |
| 7 | 90.00 | 100.00 | 549.16 | 16.0 4819 5284.9 |
| 8 | 80.00 | 80.00 | 549.31 | 16.0 4772 5247.0 |
| 9 | 100.00 | 60.00 | 549.35 | 16.1 4767 5246.6 |
| 10 | 70.00 | 100.00 | 549.31 | 16.1 4795 5263.2 |
| 11 | 100.00 | 110.00 | 549.21 | 16.1 4820 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|-------|------|--------|-------|-------|----------|
| 4799.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4725.00 | 2.43 | 0.00 | 30.00 | 6.91 | 20.60 | 5223.51 |
| 4717.00 | 4.05 | 0.00 | 70.00 | 16.13 | 12.08 | 5213.95 |
| 4736.00 | 7.29 | 0.00 | 30.00 | 6.91 | 18.47 | 5228.40 |
| 4715.00 | 8.91 | 0.00 | 60.00 | 13.83 | 12.08 | 5204.62 |
| 4689.00 | 9.72 | 0.00 | 80.00 | 18.44 | 7.91 | 5176.08 |
| 4819.00 | 13.77 | 0.00 | 10.00 | 2.30 | -3.56 | 5284.93 |
| 4772.00 | 16.20 | 0.00 | 30.00 | 6.91 | 7.10 | 5247.01 |
| 4767.00 | 18.63 | 0.00 | 50.00 | 11.52 | 9.94 | 5246.63 |
| 4795.00 | 20.25 | 0.00 | 10.00 | 2.30 | 7.10 | 5263.19 |
| 4820.00 | 22.68 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda10 FILE: wda10.gpf

BASE STATION (X,Y) 100 110
REFERENCE ELEV. 549.21
DENSITY 1.8
GRID ROTATION 0
METER FACTOR 1.08008
REFERENCE READING 4887
LATITUDE 0343000
LONGITUDE 90.0
DATE 080189

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|------------|--------|--------|------------------|
| 1 | 100.00 | 110.00 | 549.21 | 16.2 4820 5278.4 |
| 2 | 100.00 | 40.00 | 549.35 | 16.3 4731 5206.9 |
| 3 | 90.00 | 0.00 | 549.13 | 16.3 4701 5167.3 |
| 4 | 70.00 | 0.00 | 549.20 | 16.4 4711 5188.8 |
| 5 | 30.00 | 0.00 | 549.42 | 16.4 4689 5173.8 |
| 6 | 0.00 | 40.00 | 549.28 | 16.5 4708 5174.4 |
| 7 | 0.00 | 30.00 | 549.32 | 16.5 4689 5158.3 |
| 8 | 40.00 | 70.00 | 549.58 | 16.5 4734 5215.5 |
| 9 | 20.00 | 60.00 | 549.46 | 16.6 4734 5208.0 |
| 10 | 100.00 | 110.00 | 549.21 | 16.8 4828 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|-------|------|--------|-------|-------|----------|
| 4820.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4731.00 | 1.44 | 0.00 | 70.00 | 16.13 | 9.94 | 5206.86 |
| 4701.00 | 2.16 | 0.00 | 110.00 | 25.35 | -5.69 | 5167.33 |
| 4711.00 | 2.88 | 0.00 | 110.00 | 25.35 | 5.68 | 5188.78 |
| 4689.00 | 3.36 | 0.00 | 110.00 | 25.35 | 14.92 | 5173.77 |
| 4708.00 | 4.08 | 0.00 | 70.00 | 16.13 | 4.97 | 5174.41 |
| 4689.00 | 4.80 | 0.00 | 80.00 | 18.44 | 7.81 | 5158.31 |
| 4734.00 | 5.52 | 0.00 | 40.00 | 9.22 | 26.29 | 5215.45 |
| 4734.00 | 6.72 | 0.00 | 50.00 | 11.52 | 17.76 | 5208.03 |
| 4828.00 | 8.64 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda11 FILE: wda11.bpf

BASE STATION (X,Y) 100 110
REFERENCE ELEV. 549.21
DENSITY 1.8
GRID ROTATION 0
METER FACTOR 1.08008
REFERENCE READING 4887
LATITUDE 0343000
LONGITUDE 90.0
DATE 080109

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 16.8 | 4828 |
| 2 | 70.00 10.00 | 549.35 | 16.8 | 4733 |
| 3 | 40.00 0.00 | 549.51 | 16.9 | 4709 |
| 4 | 80.00 80.00 | 549.31 | 16.9 | 4757.8 |
| 5 | 50.00 60.00 | 549.48 | 17.0 | 4756 |
| 6 | 30.00 40.00 | 549.15 | 17.0 | 4778 |
| 7 | 90.00 0.00 | 549.13 | 17.0 | 4738 |
| 8 | 90.00 20.00 | 549.22 | 17.1 | 4762 |
| 9 | 60.00 0.00 | 547.23 | 17.1 | 4835 |
| 10 | 60.00 40.00 | 547.16 | 17.1 | 4919 |
| 11 | 100.00 110.00 | 549.21 | 17.2 | 4833 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|-------|------|--------|-------|---------|----------|
| 4828.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4733.00 | 5.24 | 0.00 | 100.00 | 23.05 | 9.94 | 5205.50 |
| 4709.00 | 5.40 | 0.00 | 110.00 | 25.35 | 21.31 | 5191.09 |
| 4804.00 | 8.64 | 0.00 | 30.00 | 6.91 | 7.10 | 5257.81 |
| 4756.00 | 11.88 | 0.00 | 50.00 | 11.52 | 19.18 | 5219.41 |
| 4778.00 | 14.04 | 0.00 | 70.00 | 16.13 | -4.26 | 5222.18 |
| 4738.00 | 16.20 | 0.00 | 110.00 | 25.35 | -5.69 | 5184.61 |
| 4762.00 | 18.36 | 0.00 | 90.00 | 20.74 | 0.47 | 5209.92 |
| 4835.00 | 21.60 | 0.00 | 110.00 | 25.35 | -140.93 | 5202.74 |
| 4919.00 | 23.76 | 0.00 | 70.00 | 16.13 | -145.90 | 5223.11 |
| 4833.00 | 27.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda12 FILE: wda12.bpf

BASE STATION (X,Y) 100 110
REFERENCE ELEV. 549.21
DENSITY 1.8
GRID ROTATION 0
METER FACTOR 1.08008
REFERENCE READING 4887
LATITUDE 0343000
LONGITUDE 90.0
DATE 080109

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 17.2 | 4852 |
| 2 | 40.00 40.00 | 549.41 | 17.3 | 4767 |
| 3 | 60.00 20.00 | 547.21 | 17.3 | 4918 |
| 4 | 20.00 50.00 | 549.30 | 17.4 | 4760 |
| 5 | 20.00 20.00 | 549.44 | 17.4 | 4745 |
| 6 | 10.00 0.00 | 549.47 | 17.4 | 4728 |
| 7 | 50.00 60.00 | 549.48 | 17.5 | 4796 |
| 8 | 60.00 80.00 | 547.22 | 17.5 | 4978 |
| 9 | 60.00 60.00 | 547.16 | 17.5 | 4963 |
| 10 | 90.00 80.00 | 549.24 | 17.6 | 4847 |
| 11 | 70.00 250.00 | 549.28 | 17.7 | 4662 |
| 12 | 100.00 110.00 | 549.21 | 17.7 | 4886 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|-------|------|---------|--------|---------|----------|
| 4852.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4767.00 | 2.45 | 0.00 | 70.00 | 16.13 | 14.21 | 5214.44 |
| 4918.00 | 4.90 | 0.00 | 90.00 | 20.74 | -142.34 | 5223.14 |
| 4760.00 | 8.57 | 0.00 | 60.00 | 13.83 | 6.16 | 5190.40 |
| 4745.00 | 11.02 | 0.00 | 90.00 | 20.74 | 16.11 | 5188.62 |
| 4728.00 | 14.69 | 0.00 | 110.00 | 25.35 | 18.47 | 5173.56 |
| 4796.00 | 18.36 | 0.00 | 50.00 | 11.52 | 19.18 | 5230.21 |
| 4978.00 | 20.81 | 0.00 | 30.00 | 6.91 | -141.64 | 5258.91 |
| 4963.00 | 23.26 | 0.00 | 50.00 | 11.52 | -143.90 | 5240.61 |
| 4847.00 | 26.93 | 0.00 | 30.00 | 6.91 | 2.13 | 5255.06 |
| 4662.00 | 31.83 | 0.00 | -140.00 | -32.27 | 4.97 | 5014.01 |
| 4886.00 | 36.72 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb1 FILE: wdb1.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 8.0 | 4928 5278.4 |
| 2 | 50.00 110.00 | 549.24 | 8.1 | 4867 5217.9 |
| 3 | 80.00 70.00 | 549.38 | 8.1 | 4863 5234.7 |
| 4 | 60.00 60.00 | 547.16 | 8.2 | 5015 5245.1 |
| 5 | 60.00 100.00 | 547.24 | 8.2 | 5017 5245.7 |
| 6 | 40.00 0.00 | 549.51 | 8.3 | 5775 5171.6 |
| 7 | 50.00 20.00 | 549.22 | 8.4 | 4811 5187.2 |
| 8 | 70.00 90.00 | 549.16 | 8.4 | 4884 5248.2 |
| 9 | 80.00 90.00 | 549.31 | 8.5 | 4875 5251.1 |
| 10 | 100.00 110.00 | 549.21 | 8.6 | 4908 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|--------|-------|---------|----------|
| 4928.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4867.00 | -3.27 | 0.00 | 0.00 | 0.00 | 2.13 | 5217.87 |
| 4863.00 | -5.24 | 0.00 | 40.00 | 9.22 | 12.06 | 5234.68 |
| 5015.00 | -7.20 | 0.00 | 50.00 | 11.52 | -145.90 | 5245.14 |
| 5017.00 | -9.16 | 0.00 | 10.00 | 2.30 | -140.21 | 5245.73 |
| 4775.00 | -11.78 | 0.00 | 110.00 | 25.35 | 21.31 | 5171.55 |
| 4811.00 | -13.75 | 0.00 | 90.00 | 20.74 | 0.71 | 5187.18 |
| 4884.00 | -16.36 | 0.00 | 0.00 | 4.61 | -3.56 | 5248.25 |
| 4875.00 | -18.33 | 0.00 | 20.00 | 4.61 | 7.10 | 5251.15 |
| 4908.00 | -21.60 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb2 FILE: wdb2.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 8.6 | 4908 5278.4 |
| 2 | 50.00 90.00 | 549.26 | 8.6 | 4867 5222.1 |
| 3 | 30.00 80.00 | 549.18 | 8.6 | 4827 5198.6 |
| 4 | 20.00 20.00 | 549.44 | 8.8 | 4777 5179.6 |
| 5 | 20.00 30.00 | 549.47 | 8.8 | 4784 5188.5 |
| 6 | 50.00 10.00 | 549.41 | 8.9 | 4761 5165.7 |
| 7 | 90.00 40.00 | 549.24 | 8.9 | 4810 5201.6 |
| 8 | 50.00 110.00 | 549.24 | 9.0 | 4845 5225.3 |
| 9 | 20.00 90.00 | 549.32 | 9.1 | 4807 5196.5 |
| 10 | 100.00 110.00 | 549.21 | 9.1 | 4892 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|--------|-------|-------|----------|
| 4908.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4867.00 | -1.48 | 0.00 | 20.00 | 4.61 | 3.55 | 5222.11 |
| 4827.00 | -2.96 | 0.00 | 30.00 | 6.91 | -2.13 | 5198.61 |
| 4777.00 | -5.92 | 0.00 | 90.00 | 20.74 | 16.11 | 5179.64 |
| 4784.00 | -7.41 | 0.00 | 80.00 | 18.44 | 18.24 | 5188.50 |
| 4761.00 | -8.89 | 0.00 | 100.00 | 23.05 | 14.21 | 5165.72 |
| 4810.00 | -10.86 | 0.00 | 70.00 | 16.13 | 2.13 | 5201.63 |
| 4845.00 | -12.84 | 0.00 | 0.00 | 0.00 | 2.13 | 5225.27 |
| 4807.00 | -14.81 | 0.00 | 20.00 | 4.61 | 7.81 | 5196.50 |
| 4892.00 | -17.28 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****
 PROGRAM: wdb4 FILE: wdb4.gpf
 BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----
 STATION COORD(X,Y) ELEV TIME READING G(UGALS)
 1 100.00 110.00 549.21 9.7 4883 5278.4
 2 100.00 90.00 549.16 9.7 4857 5255.5
 3 30.00 110.00 549.23 9.8 4792 5191.2
 4 90.00 40.00 549.30 9.9 4784 5210.6
 5 100.00 20.00 549.34 9.9 4756 5192.0
 6 110.00 0.00 548.96 9.9 4747 5162.7
 7 110.00 60.00 549.26 10.0 4807 5239.1
 8 120.00 70.00 549.26 10.1 4818 5254.2
 9 100.00 110.00 549.21 10.1 4847 5278.4

-----< CORRECTIONS >-----
 READING DRIFT TIDE DEPART LATDE FA/GB G(UGALS)
 4883.00 0.00 0.00 0.00 0.00 0.00 5278.35
 4857.00 -4.17 0.00 20.00 4.61 -3.56 5255.49
 4792.00 -9.72 0.00 0.00 0.00 1.42 5191.20
 4784.00 -16.66 0.00 70.00 16.13 6.39 5210.61
 4756.00 -20.83 0.00 90.00 20.74 9.24 5191.99
 4747.00 -23.61 0.00 110.00 25.35 -17.76 5162.66
 4807.00 -27.77 0.00 50.00 11.52 3.55 5239.11
 4818.00 -33.33 0.00 40.00 9.22 3.55 5254.25
 4847.00 -38.88 0.00 0.00 0.00 0.00 5278.35

*****<<< DATA SUMMARY >>>*****
 PROGRAM: wdb3 FILE: wdb3.gpf
 BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----
 STATION COORD(X,Y) ELEV TIME READING G(UGALS)
 1 100.00 110.00 549.21 9.1 4892 5278.4
 2 110.00 60.00 549.26 9.2 4830 5227.1
 3 100.00 10.00 549.30 9.2 4754 5159.7
 4 60.00 100.00 547.24 9.3 4795 5232.2
 5 30.00 70.00 549.22 9.3 4814 5206.8
 6 50.00 90.00 549.26 9.4 4818 5210.5
 7 20.00 70.00 549.36 9.4 4795 5197.8
 8 0.00 60.00 549.28 9.4 4755 5152.7
 9 20.00 0.00 549.47 9.5 4745 5170.1
 10 130.00 70.00 549.32 9.6 4817 5222.6
 11 100.00 110.00 549.21 9.7 4883 5278.4

-----< CORRECTIONS >-----
 READING DRIFT TIDE DEPART LATDE FA/GB G(UGALS)
 4892.00 0.00 0.00 0.00 0.00 0.00 5278.35
 4830.00 -0.61 0.00 50.00 11.52 3.55 5227.07
 4754.00 -1.22 0.00 100.00 23.05 6.15 5159.72
 4795.00 -2.13 0.00 10.00 2.30 -140.21 5232.21
 4814.00 -3.04 0.00 40.00 9.22 0.47 5206.83
 4818.00 -3.95 0.00 20.00 4.61 3.55 5210.54
 4795.00 -4.56 0.00 40.00 9.22 10.42 5197.78
 4755.00 -5.77 0.00 50.00 11.52 4.97 5152.65
 4745.00 -6.48 0.00 110.00 25.35 18.47 5170.09
 4817.00 -8.20 0.00 40.00 9.22 7.81 5222.58
 4883.00 -9.72 0.00 0.00 0.00 0.00 5278.35

*****<<< DATA SUMMARY >>>*****

PROGRAM: WDB5 FILE: WDB5.GPT

BASE STATION (X,Y) 100 110
REFERENCE ELEV. 549.21
DENSITY 1.8
GRID ROTATION 0
METER FACTOR 1.08008
REFERENCE READING 4887
LATITUDE 0343000
LONGITUDE 90.0
DATE 080289

*****< FIELD DATA AND RESULTS >*****

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) | |
|---------|------------|--------|--------|---------|----------|--------|
| 1 | 100.00 | 110.00 | 549.21 | 10.2 | 4846 | 5278.4 |
| 2 | 120.00 | 80.00 | 549.30 | 10.3 | 4805 | 5247.6 |
| 3 | 150.00 | 40.00 | 548.74 | 10.3 | 4776 | 5185.7 |
| 4 | 110.00 | 0.00 | 548.96 | 10.4 | 4712 | 5141.6 |
| 5 | 100.00 | 10.00 | 549.18 | 10.4 | 4726 | 5170.2 |
| 6 | 50.00 | 30.00 | 549.22 | 10.5 | 4768 | 5213.9 |
| 7 | 30.00 | 70.00 | 549.10 | 10.5 | 4793 | 5235.2 |
| 8 | 50.00 | 100.00 | 549.25 | 10.6 | 4802 | 5236.8 |
| 9 | 90.00 | 70.00 | 549.30 | 10.6 | 4797 | 5232.0 |
| 10 | 100.00 | 110.00 | 549.21 | 10.7 | 4845 | 5278.4 |

*****< CORRECTIONS >*****

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|--------|-------|--------|----------|
| 4844.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4805.00 | -0.24 | 0.00 | 30.00 | 6.91 | 6.39 | 5247.61 |
| 4776.00 | -0.34 | 0.00 | 70.00 | 16.13 | -33.51 | 5185.70 |
| 4712.00 | -0.44 | 0.00 | 110.00 | 25.35 | -17.76 | 5141.65 |
| 4726.00 | -0.51 | 0.00 | 100.00 | 23.05 | -2.13 | 5170.16 |
| 4768.00 | -0.64 | 0.00 | 80.00 | 18.44 | 0.71 | 5213.89 |
| 4793.00 | -0.71 | 0.00 | 40.00 | 9.22 | -7.82 | 5235.22 |
| 4802.00 | -0.81 | 0.00 | 10.00 | 2.30 | 2.84 | 5236.78 |
| 4797.00 | -0.95 | 0.00 | 40.00 | 9.22 | 6.39 | 5247.98 |
| 4845.00 | -1.08 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: WDB6 FILE: WDB6.GPT

BASE STATION (X,Y) 100 110
REFERENCE ELEV. 549.21
DENSITY 1.8
GRID ROTATION 0
METER FACTOR 1.08008
REFERENCE READING 4887
LATITUDE 0343000
LONGITUDE 90.0
DATE 080289

*****< FIELD DATA AND RESULTS >*****

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) | |
|---------|------------|--------|--------|---------|----------|--------|
| 1 | 100.00 | 110.00 | 549.21 | 10.8 | 4844 | 5278.4 |
| 2 | 100.00 | 100.00 | 549.01 | 10.8 | 4837 | 5262.7 |
| 3 | 90.00 | 10.00 | 549.26 | 10.9 | 4717 | 5182.0 |
| 4 | 50.00 | 30.00 | 549.22 | 10.9 | 4737 | 5202.3 |
| 5 | 40.00 | 10.00 | 549.52 | 11.0 | 4701 | 5197.2 |
| 6 | 0.00 | 20.00 | 549.31 | 11.1 | 4682 | 5167.8 |
| 7 | 30.00 | 110.00 | 549.23 | 11.1 | 4731 | 5202.4 |
| 8 | 0.00 | 70.00 | 549.42 | 11.2 | 4674 | 5171.5 |
| 9 | 100.00 | 110.00 | 549.21 | 11.3 | 4780 | 5278.4 |

*****< CORRECTIONS >*****

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|--------|-------|--------|----------|
| 4844.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4837.00 | -4.07 | 0.00 | 10.00 | 2.30 | -14.45 | 5262.72 |
| 4717.00 | -14.23 | 0.00 | 100.00 | 23.05 | 3.55 | 5182.01 |
| 4737.00 | -20.33 | 0.00 | 80.00 | 18.44 | 0.71 | 5202.26 |
| 4701.00 | -28.46 | 0.00 | 100.00 | 23.05 | 21.79 | 5197.20 |
| 4682.00 | -36.60 | 0.00 | 90.00 | 20.74 | 7.10 | 5167.82 |
| 4731.00 | -44.73 | 0.00 | 0.00 | 0.00 | 1.42 | 5202.45 |
| 4674.00 | -52.86 | 0.00 | 40.00 | 9.22 | 14.46 | 5171.50 |
| 4780.00 | -69.13 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb7 FILE: wdb7.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) | | |
|---------|------------|--------|--------|------------------|------|--------|
| 1 | 100.00 | 110.00 | 549.21 | 11.3 | 4780 | 5278.4 |
| 2 | 140.00 | 80.00 | 549.51 | 11.4 | 4710 | 5237.2 |
| 3 | 150.00 | 0.00 | 548.53 | 11.4 | 4678 | 5157.7 |
| 4 | 90.00 | 10.00 | 549.26 | 11.5 | 4659 | 5190.9 |
| 5 | 170.00 | 20.00 | 548.19 | 11.5 | 4707 | 5170.7 |
| 6 | 170.00 | 60.00 | 548.55 | 11.6 | 4702 | 5185.8 |
| 7 | 90.00 | 70.00 | 549.30 | 11.6 | 4722 | 5264.6 |
| 8 | 150.00 | 20.00 | 548.62 | 11.6 | 4669 | 5176.8 |
| 9 | 110.00 | 110.00 | 549.43 | 11.7 | 4714 | 5270.3 |
| 10 | 100.00 | 110.00 | 549.21 | 11.8 | 4728 | 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIME | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|--------|-------|--------|----------|
| 4780.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4710.00 | -6.26 | 0.00 | 30.00 | 6.91 | 21.31 | 5237.22 |
| 4678.00 | -12.48 | 0.00 | 110.00 | 25.35 | -48.32 | 5157.70 |
| 4659.00 | -16.64 | 0.00 | 100.00 | 23.05 | 3.55 | 5190.90 |
| 4707.00 | -22.86 | 0.00 | 90.00 | 20.74 | -72.47 | 5170.66 |
| 4702.00 | -27.04 | 0.00 | 50.00 | 11.52 | -46.90 | 5185.77 |
| 4722.00 | -33.28 | 0.00 | 40.00 | 9.22 | 6.39 | 5264.60 |
| 4669.00 | -39.52 | 0.00 | 90.00 | 20.74 | -41.92 | 5176.81 |
| 4714.00 | -47.84 | 0.00 | 0.00 | 0.00 | 15.39 | 5270.30 |
| 4728.00 | -56.16 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb8 FILE: wdb8.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) | | |
|---------|------------|--------|--------|------------------|------|--------|
| 1 | 100.00 | 110.00 | 549.21 | 11.8 | 4728 | 5278.4 |
| 2 | 110.00 | 90.00 | 549.27 | 11.8 | 4707 | 5264.8 |
| 3 | 170.00 | 0.00 | 548.17 | 11.9 | 4632 | 5126.6 |
| 4 | 40.00 | 10.00 | 549.60 | 11.9 | 4613 | 5205.8 |
| 5 | 150.00 | 80.00 | 549.36 | 12.0 | 4664 | 5227.9 |
| 6 | 170.00 | 80.00 | 549.11 | 12.0 | 4687 | 5235.9 |
| 7 | 140.00 | 80.00 | 549.43 | 12.1 | 4701 | 5273.5 |
| 8 | 170.00 | 40.00 | 548.15 | 12.1 | 4713 | 5205.2 |
| 9 | 140.00 | 90.00 | 549.22 | 12.1 | 4694 | 5249.7 |
| 10 | 100.00 | 110.00 | 549.21 | 12.2 | 4725 | 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIME | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|--------|-------|--------|----------|
| 4728.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4707.00 | -0.25 | 0.00 | 20.00 | 4.61 | 4.26 | 5264.79 |
| 4632.00 | -0.50 | 0.00 | 110.00 | 25.35 | -73.90 | 5126.62 |
| 4613.00 | -0.87 | 0.00 | 100.00 | 23.05 | 27.71 | 5205.77 |
| 4664.00 | -1.37 | 0.00 | 30.00 | 6.91 | 10.42 | 5227.93 |
| 4687.00 | -1.62 | 0.00 | 30.00 | 6.91 | -6.75 | 5235.85 |
| 4701.00 | -1.99 | 0.00 | 30.00 | 6.91 | 15.40 | 5273.49 |
| 4713.00 | -2.49 | 0.00 | 70.00 | 16.13 | -75.55 | 5205.22 |
| 4694.00 | -2.74 | 0.00 | 20.00 | 4.61 | 0.71 | 5249.69 |
| 4725.00 | -3.24 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb9 FILE: wdb9.grf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4687
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|------------|--------|--------|------------------|
| 1 | 100.00 | 110.00 | 549.21 | 16.2 4710 5278.4 |
| 2 | 110.00 | 100.00 | 549.28 | 14.2 4683 5254.3 |
| 3 | 120.00 | 90.00 | 549.21 | 14.3 4681 5247.3 |
| 4 | 110.00 | 90.00 | 549.27 | 14.3 4700 5270.6 |
| 5 | 25.00 | 75.00 | 549.46 | 14.4 4637 5216.6 |
| 6 | 5.00 | 75.00 | 549.39 | 14.5 4648 5191.0 |
| 7 | 20.00 | 100.00 | 549.27 | 14.6 4648 5201.6 |
| 8 | 25.00 | 85.00 | 549.13 | 14.6 4672 5219.1 |
| 9 | 90.00 | 110.00 | 549.21 | 14.7 4736 5285.2 |
| 10 | 100.00 | 110.00 | 549.21 | 14.8 4733 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|--------|-------|-------|----------|
| 4710.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4683.00 | 2.19 | 0.00 | 10.00 | 2.30 | 4.97 | 5254.28 |
| 4681.00 | 4.73 | 0.00 | 20.00 | 4.61 | 0.00 | 5247.25 |
| 4700.00 | 5.85 | 0.00 | 20.00 | 4.61 | 4.26 | 5270.58 |
| 4637.00 | 8.77 | 0.00 | 35.00 | 8.07 | 17.76 | 5216.57 |
| 4622.00 | 13.15 | 0.00 | 35.00 | 8.07 | 12.79 | 5191.01 |
| 4648.00 | 16.07 | 0.00 | 10.00 | 2.30 | 4.02 | 5201.64 |
| 4672.00 | 18.27 | 0.00 | 25.00 | 5.76 | -5.69 | 5219.12 |
| 4736.00 | 21.19 | 0.00 | 0.00 | 0.00 | 0.00 | 5285.24 |
| 4733.00 | 24.84 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb10 FILE: wdb10.qpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4687
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|------------|--------|--------|------------------|
| 1 | 100.00 | 110.00 | 549.21 | 14.8 4733 5278.4 |
| 2 | 20.00 | 110.00 | 549.45 | 14.8 4652 5205.4 |
| 3 | 15.00 | 105.00 | 549.15 | 14.9 4658 5188.4 |
| 4 | 15.00 | 75.00 | 549.40 | 14.9 4632 5181.7 |
| 5 | 170.00 | 40.00 | 548.23 | 15.1 4685 5158.1 |
| 6 | 0.00 | 80.00 | 549.24 | 15.1 4618 5144.1 |
| 7 | 0.00 | 85.00 | 549.22 | 15.2 4624 5144.7 |
| 8 | 20.00 | 100.00 | 549.27 | 15.3 4668 5189.5 |
| 9 | 40.00 | 120.00 | 549.26 | 15.3 4696 5212.2 |
| 10 | 100.00 | 110.00 | 549.21 | 15.4 4763 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|--------|-------|--------|----------|
| 4733.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4652.00 | 2.49 | 0.00 | 0.00 | 0.00 | 17.05 | 5205.42 |
| 4658.00 | 5.82 | 0.00 | 5.00 | 1.15 | -4.26 | 5188.42 |
| 4632.00 | 9.14 | 0.00 | 35.00 | 8.07 | 13.50 | 5181.69 |
| 4685.00 | 14.96 | 0.00 | 70.00 | 16.13 | -69.63 | 5158.05 |
| 4618.00 | 19.11 | 0.00 | 30.00 | 6.91 | 2.13 | 5144.08 |
| 4624.00 | 22.43 | 0.00 | 25.00 | 5.76 | 0.71 | 5144.66 |
| 4668.00 | 24.93 | 0.00 | 10.00 | 2.30 | 4.02 | 5189.55 |
| 4696.00 | 27.42 | 0.00 | -10.00 | -2.30 | 3.55 | 5212.22 |
| 4763.00 | 32.40 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb11 FILE: wdb11.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(USALS) |
|---------|------------|--------|------|------------------|
| 1 | 100.00 | 110.00 | 15.4 | 4763 5278.4 |
| 2 | 60.00 | 140.00 | 15.5 | 4862 5235.1 |
| 3 | 20.00 | 160.00 | 15.5 | 4636 5137.6 |
| 4 | 0.00 | 80.03 | 15.6 | 4620 5142.6 |
| 5 | 0.00 | 130.00 | 15.6 | 4640 5155.3 |
| 6 | 50.00 | 130.00 | 15.6 | 4702 5215.2 |
| 7 | 25.00 | 85.00 | 15.7 | 4691 5203.5 |
| 8 | 15.00 | 85.00 | 15.7 | 4665 5191.4 |
| 9 | 90.00 | 140.00 | 15.8 | 4753 5263.6 |
| 10 | 100.00 | 110.00 | 15.9 | 4759 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(USALS) |
|---------|-------|------|--------|--------|---------|----------|
| 4763.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4862.00 | -0.50 | 0.00 | -30.00 | -6.91 | -143.77 | 5235.10 |
| 4636.00 | -0.83 | 0.00 | -50.00 | -11.52 | 7.13 | 5137.59 |
| 4620.00 | -1.33 | 0.00 | 30.00 | 6.91 | 10.42 | 5142.56 |
| 4640.00 | -1.83 | 0.00 | -20.00 | -4.61 | 12.55 | 5155.27 |
| 4702.00 | -2.33 | 0.00 | -20.00 | -4.61 | 4.97 | 5215.15 |
| 4691.00 | -2.82 | 0.00 | 25.00 | 5.76 | -5.69 | 5203.49 |
| 4665.00 | -3.16 | 0.00 | 25.00 | 5.76 | 9.94 | 5191.37 |
| 4753.00 | -3.66 | 0.00 | -30.00 | -6.91 | -0.71 | 5263.58 |
| 4759.00 | -4.32 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb12 FILE: wdb12.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(USALS) |
|---------|------------|--------|------|------------------|
| 1 | 100.00 | 110.00 | 15.9 | 4759 5278.4 |
| 2 | 130.00 | 140.00 | 15.9 | 4787 5298.5 |
| 3 | 150.00 | 100.00 | 16.0 | 4722 5250.8 |
| 4 | 110.00 | 100.00 | 16.0 | 4753 5278.0 |
| 5 | 160.00 | 130.00 | 16.0 | 4770 5271.4 |
| 6 | 170.00 | 100.00 | 16.1 | 4749 5258.6 |
| 7 | 60.00 | 140.00 | 16.1 | 4857 5227.6 |
| 8 | 80.00 | 120.00 | 16.2 | 4747 5261.1 |
| 9 | 120.00 | 120.00 | 16.2 | 4779 5294.3 |
| 10 | 100.00 | 110.00 | 16.3 | 4767 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(USALS) |
|---------|-------|------|--------|-------|---------|----------|
| 4759.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4787.00 | 1.73 | 0.00 | -30.00 | -6.91 | -1.42 | 5298.53 |
| 4722.00 | 2.42 | 0.00 | 10.00 | 2.30 | 12.55 | 5250.82 |
| 4753.00 | 3.11 | 0.00 | 10.00 | 2.30 | 4.97 | 5276.04 |
| 4770.00 | 3.80 | 0.00 | -20.00 | -4.61 | -10.43 | 5271.40 |
| 4749.00 | 4.84 | 0.00 | 10.00 | 2.30 | -6.40 | 5258.62 |
| 4857.00 | 5.88 | 0.00 | -30.00 | -6.91 | -143.77 | 5227.56 |
| 4747.00 | 6.91 | 0.00 | -10.00 | -2.30 | 4.97 | 5261.15 |
| 4779.00 | 7.60 | 0.00 | -10.00 | -2.30 | 4.26 | 5294.31 |
| 4767.00 | 8.66 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb13 FILE: wdb13.grf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(USALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 16.3 | 4767 5278.4 |
| 2 | 60.00 160.00 | 547.08 | 16.4 | 4879 5230.3 |
| 3 | 70.00 120.00 | 549.35 | 16.4 | 4755 5283.3 |
| 4 | 130.00 140.00 | 549.26 | 16.5 | 4812 5310.3 |
| 5 | 100.00 150.00 | 549.27 | 16.5 | 4801 5292.3 |
| 6 | 15.00 95.00 | 549.24 | 16.6 | 4706 5194.3 |
| 7 | 0.00 130.00 | 549.39 | 16.7 | 4679 5162.7 |
| 8 | 25.00 95.00 | 549.39 | 16.7 | 4727 5220.3 |
| 9 | 60.00 120.00 | 547.17 | 16.8 | 4926 5266.9 |
| 10 | 80.00 160.00 | 549.40 | 16.8 | 4763 5236.6 |
| 11 | 100.00 110.00 | 549.21 | 16.9 | 4811 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(USALS) |
|---------|-------|------|--------|--------|---------|----------|
| 4767.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4879.00 | 5.94 | 0.00 | -50.00 | -11.52 | -151.58 | 5230.27 |
| 4755.00 | 9.50 | 0.00 | -10.00 | -2.30 | 9.71 | 5283.29 |
| 4812.00 | 13.07 | 0.00 | -30.00 | -6.91 | 3.31 | 5310.28 |
| 4801.00 | 17.82 | 0.00 | -40.00 | -9.22 | 4.26 | 5292.30 |
| 4705.00 | 23.76 | 0.00 | 15.00 | 3.46 | 2.13 | 5194.29 |
| 4679.00 | 28.51 | 0.00 | -20.00 | -4.61 | 12.55 | 5162.73 |
| 4727.00 | 30.89 | 0.00 | 15.00 | 3.46 | 12.55 | 5220.27 |
| 4926.00 | 35.64 | 0.00 | -10.00 | -2.30 | -145.19 | 5266.95 |
| 4763.00 | 39.21 | 0.00 | -50.00 | -11.52 | 13.26 | 5236.56 |
| 4811.00 | 47.52 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb14 FILE: wdb14.grf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(USALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 16.9 | 4811 5278.4 |
| 2 | 110.00 140.00 | 549.26 | 17.0 | 4844 5307.8 |
| 3 | 140.00 160.00 | 549.24 | 17.0 | 4817 5269.7 |
| 4 | 150.00 100.00 | 549.27 | 17.1 | 4784 5247.2 |
| 5 | 170.00 120.00 | 549.10 | 17.1 | 4822 5287.8 |
| 6 | 110.00 170.00 | 549.37 | 17.2 | 4789 5235.1 |
| 7 | 100.00 150.00 | 549.27 | 17.3 | 4839 5283.7 |
| 8 | 90.00 180.00 | 549.17 | 17.3 | 4776 5198.8 |
| 9 | 90.00 130.00 | 549.19 | 17.4 | 4842 5280.2 |
| 10 | 100.00 120.00 | 549.24 | 17.5 | 4848 5288.7 |
| 11 | 100.00 110.00 | 549.21 | 17.6 | 4847 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(USALS) |
|---------|-------|------|--------|--------|-------|----------|
| 4811.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4844.00 | 2.85 | 0.00 | -30.00 | -6.91 | 3.55 | 5307.79 |
| 4817.00 | 5.09 | 0.00 | -50.00 | -11.52 | 2.13 | 5269.75 |
| 4784.00 | 8.34 | 0.00 | 10.00 | 2.30 | 4.26 | 5247.22 |
| 4822.00 | 12.33 | 0.00 | -10.00 | -2.30 | -7.82 | 5287.78 |
| 4789.00 | 17.07 | 0.00 | -60.00 | -13.83 | 11.37 | 5235.06 |
| 4839.00 | 19.92 | 0.00 | -40.00 | -9.22 | 4.26 | 5283.72 |
| 4776.00 | 22.76 | 0.00 | -70.00 | -16.13 | -2.84 | 5198.81 |
| 4842.00 | 25.61 | 0.00 | -20.00 | -4.61 | -1.42 | 5280.20 |
| 4848.00 | 29.40 | 0.00 | -10.00 | -2.30 | 2.13 | 5288.74 |
| 4847.00 | 38.88 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: web15 FILE: web15.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) |
|---------|------------|--------|--------|---------|----------|
| 1 | 100.00 | 110.00 | 549.21 | 17.6 | 4867 |
| 2 | 70.00 | 150.00 | 549.21 | 17.7 | 4821 |
| 3 | 25.00 | 105.00 | 549.45 | 17.7 | 4773 |
| 4 | 60.00 | 180.00 | 547.02 | 17.8 | 4909 |
| 5 | 70.00 | 170.00 | 549.13 | 17.8 | 4797 |
| 6 | 130.00 | 40.00 | 549.17 | 17.8 | 4756 |
| 7 | 130.00 | 100.00 | 549.20 | 17.9 | 4834 |
| 8 | 160.00 | 110.00 | 549.14 | 17.9 | 4857 |
| 9 | 140.00 | 130.00 | 549.16 | 17.9 | 4864 |
| 10 | 100.00 | 110.00 | 549.21 | 18.0 | 4866 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|-------|------|--------|--------|---------|----------|
| 4867.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4821.00 | 1.95 | 0.00 | -40.00 | -9.22 | 0.00 | 5239.09 |
| 4773.00 | 4.89 | 0.00 | 5.00 | 1.15 | 17.05 | 5211.74 |
| 4909.00 | 6.84 | 0.00 | -70.00 | -16.13 | -155.84 | 5166.50 |
| 4797.00 | 8.79 | 0.00 | -60.00 | -13.83 | -5.69 | 5196.04 |
| 4756.00 | 11.73 | 0.00 | 70.00 | 16.13 | -2.84 | 5181.63 |
| 4834.00 | 13.68 | 0.00 | 10.00 | 2.30 | -0.71 | 5252.22 |
| 4857.00 | 15.64 | 0.00 | 0.00 | 0.00 | -4.97 | 5268.54 |
| 4864.00 | 16.61 | 0.00 | -20.00 | -4.61 | -3.79 | 5271.70 |
| 4866.00 | 20.52 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: web16 FILE: web16.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080289

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) |
|---------|------------|--------|--------|---------|----------|
| 1 | 100.00 | 110.00 | 549.21 | 18.0 | 4866 |
| 2 | 140.00 | 110.00 | 549.24 | 18.0 | 4830 |
| 3 | 120.00 | 160.00 | 549.30 | 18.1 | 4870 |
| 4 | 70.00 | 150.00 | 549.21 | 18.1 | 4836 |
| 5 | 30.00 | 140.00 | 549.33 | 18.1 | 4808 |
| 6 | 15.00 | 115.00 | 549.33 | 18.2 | 4796 |
| 7 | 110.00 | 140.00 | 549.31 | 18.3 | 4931 |
| 8 | 170.00 | 140.00 | 549.08 | 18.3 | 4891 |
| 9 | 130.00 | 110.00 | 549.15 | 18.3 | 4916 |
| 10 | 110.00 | 120.00 | 549.47 | 18.4 | 4900 |
| 11 | 100.00 | 110.00 | 549.21 | 18.4 | 4907 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|-------|------|--------|--------|-------|----------|
| 4866.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4830.00 | 5.54 | 0.00 | 0.00 | 0.00 | 2.13 | 5236.06 |
| 4870.00 | 9.23 | 0.00 | -50.00 | -11.52 | 6.39 | 5268.31 |
| 4836.00 | 12.92 | 0.00 | -40.00 | -9.22 | 0.00 | 5223.81 |
| 4808.00 | 16.61 | 0.00 | -30.00 | -6.91 | 8.53 | 5200.71 |
| 4796.00 | 22.14 | 0.00 | -5.00 | -1.15 | 8.76 | 5188.21 |
| 4931.00 | 27.68 | 0.00 | -30.00 | -6.91 | 7.10 | 5321.07 |
| 4891.00 | 33.21 | 0.00 | -30.00 | -6.91 | -9.24 | 5255.99 |
| 4916.00 | 36.90 | 0.00 | 0.00 | 0.00 | -4.26 | 5291.19 |
| 4900.00 | 40.59 | 0.00 | -10.00 | -2.30 | 18.23 | 5290.41 |
| 4907.00 | 44.28 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdc12 FILE: wdc12.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080389

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 17.1 | 4822 |
| 2 | 30.00 150.00 | 549.24 | 17.2 | 4755 |
| 3 | 0.00 190.00 | 549.33 | 17.2 | 4678 |
| 4 | 110.00 220.00 | 549.12 | 17.3 | 4748 |
| 5 | 70.00 200.00 | 549.15 | 17.3 | 4728 |
| 6 | 90.00 190.00 | 549.15 | 17.4 | 4785 |
| 7 | 10.00 180.00 | 549.40 | 17.4 | 4691 |
| 8 | 20.00 150.00 | 549.41 | 17.5 | 4743 |
| 9 | 100.00 110.00 | 549.21 | 17.5 | 4856 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | PA/GB | G(UGALS) |
|---------|-------|------|---------|--------|-------|----------|
| 4822.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4755.00 | 4.79 | 0.00 | -40.00 | -9.22 | 2.13 | 5194.11 |
| 4678.00 | 7.98 | 0.00 | -80.00 | -18.44 | 8.53 | 5104.92 |
| 4748.00 | 14.37 | 0.00 | -110.00 | -25.35 | -6.40 | 5152.31 |
| 4728.00 | 17.56 | 0.00 | -90.00 | -20.74 | -4.27 | 5134.25 |
| 4785.00 | 22.35 | 0.00 | -80.00 | -18.44 | -4.26 | 5193.33 |
| 4691.00 | 27.14 | 0.00 | -70.00 | -16.13 | 13.50 | 5107.08 |
| 4743.00 | 31.93 | 0.00 | -40.00 | -9.22 | 14.21 | 5166.08 |
| 4856.00 | 36.72 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdc11 FILE: wdc11.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080389

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 16.8 | 4816 |
| 2 | 150.00 130.00 | 549.05 | 16.8 | 4827 |
| 3 | 110.00 180.00 | 549.26 | 16.9 | 4783 |
| 4 | 80.00 170.00 | 549.41 | 16.9 | 4768 |
| 5 | 40.00 200.00 | 549.37 | 17.0 | 4700 |
| 6 | 10.00 180.00 | 549.40 | 17.0 | 4691 |
| 7 | 60.00 220.00 | 547.15 | 17.0 | 4851 |
| 8 | 50.00 180.00 | 549.15 | 17.1 | 4730 |
| 9 | 100.00 110.00 | 549.21 | 17.1 | 4820 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | PA/GB | G(UGALS) |
|---------|-------|------|---------|--------|--------|----------|
| 4816.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4827.00 | 0.59 | 0.00 | -20.00 | -4.61 | -11.37 | 5273.66 |
| 4783.00 | 0.98 | 0.00 | -70.00 | -16.13 | 3.55 | 5229.14 |
| 4768.00 | 1.37 | 0.00 | -60.00 | -13.83 | 13.97 | 5225.27 |
| 4700.00 | 1.96 | 0.00 | -90.00 | -20.74 | 11.37 | 5161.72 |
| 4691.00 | 2.36 | 0.00 | -70.00 | -16.13 | 13.50 | 5136.35 |
| 4851.00 | 2.95 | 0.00 | -110.00 | -25.35 | -14.61 | 5141.25 |
| 4730.00 | 3.53 | 0.00 | -70.00 | -16.13 | -4.26 | 5161.53 |
| 4820.00 | 4.32 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdc-9 FILE: wdc-9.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080309

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 15.5 | 4775 5278.4 |
| 2 | 80.00 170.00 | 549.41 | 15.6 | 4708 5204.4 |
| 3 | 20.00 210.00 | 549.27 | 15.6 | 4611 5078.4 |
| 4 | 0.00 105.00 | 549.25 | 15.7 | 4665 5157.2 |
| 5 | 20.00 140.00 | 549.39 | 15.8 | 4690 5184.4 |
| 6 | 100.00 160.00 | 549.22 | 15.9 | 4784 5287.6 |
| 7 | 100.00 210.00 | 549.26 | 16.0 | 4669 5132.1 |
| 8 | 80.00 200.00 | 549.27 | 16.0 | 4683 5148.4 |
| 9 | 100.00 110.00 | 549.21 | 16.2 | 4791 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|-------|----------|
| 4775.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4708.00 | 1.69 | 0.00 | -60.00 | -13.83 | 13.97 | 5204.44 |
| 4611.00 | 3.79 | 0.00 | -100.00 | -73.05 | 4.02 | 5078.40 |
| 4665.00 | 6.32 | 0.00 | 5.00 | 1.15 | 2.84 | 5157.21 |
| 4690.00 | 8.01 | 0.00 | -30.00 | -6.91 | 12.79 | 5184.41 |
| 4784.00 | 9.69 | 0.00 | -50.00 | -11.52 | 0.71 | 5267.56 |
| 4669.00 | 12.22 | 0.00 | -100.00 | -23.05 | 3.55 | 5132.14 |
| 4683.00 | 13.91 | 0.00 | -90.00 | -20.74 | 4.02 | 5148.35 |
| 4791.00 | 17.28 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdc-10 FILE: wdc-10.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080309

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 16.2 | 4791 5278.4 |
| 2 | 100.00 180.00 | 549.31 | 16.3 | 4749 5220.2 |
| 3 | 50.00 190.00 | 549.18 | 16.3 | 4692 5144.1 |
| 4 | 120.00 170.00 | 549.32 | 16.4 | 4773 5283.1 |
| 5 | 100.00 200.00 | 549.14 | 16.5 | 4725 5169.3 |
| 6 | 60.00 220.00 | 547.15 | 16.5 | 4822 5124.0 |
| 7 | 80.00 200.00 | 549.15 | 16.6 | 4717 5155.4 |
| 8 | 110.00 220.00 | 549.12 | 16.6 | 4703 5131.3 |
| 9 | 100.00 110.00 | 549.21 | 16.8 | 4816 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|---------|----------|
| 4791.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4749.00 | 3.75 | 0.00 | -70.00 | -16.13 | 7.10 | 5220.21 |
| 4692.00 | 6.75 | 0.00 | -80.00 | -18.44 | -2.13 | 5144.10 |
| 4773.00 | 9.75 | 0.00 | -60.00 | -13.83 | 7.81 | 5283.14 |
| 4725.00 | 12.00 | 0.00 | -90.00 | -20.74 | -4.97 | 5169.35 |
| 4822.00 | 15.00 | 0.00 | -110.00 | -25.33 | -146.61 | 5124.87 |
| 4717.00 | 18.00 | 0.00 | -90.00 | -20.74 | -4.26 | 5155.42 |
| 4703.00 | 20.25 | 0.00 | -110.00 | -25.33 | -6.40 | 5131.30 |
| 4816.00 | 27.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdc7 FILE: wdc7.opf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080369

-----<< FIELD DATA AND RESULTS >>-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | 0(USUALS) |
|---------|------------|--------|--------|---------|-------------|
| 1 | 100.00 | 110.00 | 549.21 | 14.5 | 4749 5278.4 |
| 2 | 50.00 | 150.00 | 549.24 | 14.5 | 4686 5203.2 |
| 3 | 5.00 | 125.00 | 549.35 | 14.6 | 4637 5163.9 |
| 4 | 20.00 | 120.00 | 549.34 | 14.6 | 4671 5201.0 |
| 5 | 0.00 | 105.00 | 549.25 | 14.7 | 4647 5172.2 |
| 6 | 0.00 | 120.00 | 549.26 | 14.7 | 4647 5169.4 |
| 7 | 140.00 | 200.00 | 549.09 | 14.8 | 4678 5172.4 |
| 8 | 130.00 | 150.00 | 549.23 | 14.9 | 4743 5264.3 |
| 9 | 100.00 | 110.00 | 549.21 | 15.0 | 4749 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/08 | 0(USUALS) |
|---------|-------|------|--------|--------|-------|-----------|
| 4749.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4686.00 | 0.00 | 0.00 | -40.00 | -9.22 | 2.13 | 5203.22 |
| 4637.00 | 0.00 | 0.00 | -15.00 | -3.46 | 9.94 | 5163.87 |
| 4671.00 | 0.00 | 0.00 | -10.00 | -2.30 | 9.24 | 5201.04 |
| 4647.00 | 0.00 | 0.00 | 5.00 | 1.13 | 2.84 | 5172.18 |
| 4647.00 | 0.00 | 0.00 | -10.00 | -2.30 | 3.95 | 5169.43 |
| 4678.00 | 0.00 | 0.00 | -90.00 | -20.74 | -8.53 | 5172.40 |
| 4743.00 | 0.00 | 0.00 | -40.00 | -9.22 | 1.66 | 5264.31 |
| 4749.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdc8 FILE: wdc8.opf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080369

-----<< FIELD DATA AND RESULTS >>-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | 0(USUALS) |
|---------|------------|--------|--------|---------|-------------|
| 1 | 100.00 | 110.00 | 549.21 | 15.0 | 4749 5278.4 |
| 2 | 120.00 | 170.00 | 549.32 | 15.1 | 4708 5224.3 |
| 3 | 140.00 | 120.00 | 549.16 | 15.1 | 4735 5250.8 |
| 4 | 170.00 | 160.00 | 549.05 | 15.2 | 4738 5231.4 |
| 5 | 140.00 | 190.00 | 549.27 | 15.3 | 4692 5187.6 |
| 6 | 100.00 | 210.00 | 549.26 | 15.3 | 4649 5133.1 |
| 7 | 50.00 | 150.00 | 549.32 | 15.4 | 4703 5206.8 |
| 8 | 110.00 | 130.00 | 549.41 | 15.4 | 4791 5308.0 |
| 9 | 100.00 | 110.00 | 549.21 | 15.5 | 4775 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/08 | 0(USUALS) |
|---------|-------|------|---------|--------|--------|-----------|
| 4749.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4708.00 | 3.74 | 0.00 | -60.00 | -13.83 | 7.81 | 5224.31 |
| 4735.00 | 6.55 | 0.00 | -10.00 | -2.30 | -3.54 | 5250.82 |
| 4738.00 | 12.17 | 0.00 | -30.00 | -11.52 | -11.37 | 5231.41 |
| 4692.00 | 14.98 | 0.00 | -80.00 | -18.44 | 4.26 | 5187.63 |
| 4649.00 | 17.79 | 0.00 | -100.00 | -23.05 | 3.95 | 5133.06 |
| 4703.00 | 21.53 | 0.00 | -60.00 | -9.22 | 8.85 | 5206.87 |
| 4791.00 | 25.27 | 0.00 | -20.00 | -4.61 | 14.21 | 5308.04 |
| 4775.00 | 28.08 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdc6 FILE: wdc6.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080389

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 12.3 | 4779 5278.4 |
| 2 | 150.00 140.00 | 549.22 | 12.3 | 4777 5273.0 |
| 3 | 170.00 160.30 | 549.05 | 12.4 | 4754 5233.2 |
| 4 | 170.00 180.00 | 549.09 | 12.4 | 4713 5188.9 |
| 5 | 140.00 200.00 | 549.09 | 12.5 | 4688 5159.7 |
| 6 | 130.00 120.00 | 549.11 | 12.6 | 4760 5260.3 |
| 7 | 70.00 130.00 | 549.26 | 12.6 | 4738 5266.7 |
| 8 | 90.00 150.00 | 549.21 | 12.7 | 4755 5280.4 |
| 9 | 100.00 110.00 | 549.21 | 12.9 | 4757 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATD | FA/GB | G(UGALS) |
|---------|--------|------|--------|--------|--------|----------|
| 4779.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4777.00 | -2.97 | 0.00 | -30.00 | -6.91 | 0.71 | 5272.95 |
| 4754.00 | -6.75 | 0.00 | -50.00 | -11.52 | -11.37 | 5233.21 |
| 4713.00 | -6.53 | 0.00 | -70.00 | -16.13 | -5.53 | 5188.94 |
| 4688.00 | -8.91 | 0.00 | -90.00 | -20.74 | -8.53 | 5159.79 |
| 4760.00 | -11.88 | 0.00 | -10.00 | -2.30 | -7.11 | 5260.30 |
| 4738.00 | -13.66 | 0.00 | -20.00 | -4.61 | 3.55 | 5266.67 |
| 4755.00 | -17.23 | 0.00 | -40.00 | -9.22 | 0.00 | 5280.44 |
| 4757.00 | -23.76 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdc5 FILE: wdc5.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080389

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 11.4 | 4827 5278.4 |
| 2 | 70.00 130.00 | 549.26 | 11.4 | 4779 5230.4 |
| 3 | 40.00 170.00 | 549.39 | 11.5 | 4704 5153.2 |
| 4 | 30.00 130.00 | 549.23 | 11.6 | 4732 5185.5 |
| 5 | 20.00 120.00 | 549.34 | 11.6 | 4722 5189.8 |
| 6 | 70.00 160.00 | 549.17 | 11.7 | 4760 5214.6 |
| 7 | 110.00 150.00 | 549.33 | 11.8 | 4810 5286.3 |
| 8 | 150.00 120.00 | 549.00 | 12.0 | 4766 5232.2 |
| 9 | 100.00 110.00 | 549.21 | 12.2 | 4778 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATD | FA/GB | G(UGALS) |
|---------|--------|------|--------|--------|--------|----------|
| 4827.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4779.00 | -4.59 | 0.00 | -20.00 | -4.61 | 3.55 | 5230.44 |
| 4704.00 | -8.99 | 0.00 | -60.00 | -13.83 | 12.55 | 5153.21 |
| 4732.00 | -12.98 | 0.00 | -20.00 | -4.61 | 1.42 | 5185.53 |
| 4722.00 | -17.97 | 0.00 | -10.00 | -2.30 | 9.24 | 5189.85 |
| 4760.00 | -22.97 | 0.00 | -50.00 | -11.52 | -2.84 | 5214.58 |
| 4810.00 | -26.96 | 0.00 | -40.00 | -9.22 | 8.53 | 5286.26 |
| 4766.00 | -36.95 | 0.00 | -10.00 | -2.30 | -14.92 | 5232.19 |
| 4778.00 | -52.92 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wd3 FILE: wd3.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080389

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 10.2 | 4891 |
| 2 | 70.00 140.00 | 549.22 | 10.3 | 4849 |
| 3 | 30.00 130.00 | 549.23 | 10.3 | 4807 |
| 4 | 0.00 150.00 | 549.29 | 10.4 | 4734 |
| 5 | 30.00 120.00 | 549.28 | 10.5 | 4797 |
| 6 | 50.00 160.00 | 549.25 | 10.6 | 4788 |
| 7 | 110.00 190.00 | 549.24 | 10.6 | 4796 |
| 8 | 130.00 180.00 | 549.17 | 10.7 | 4831 |
| 9 | 100.00 110.00 | 549.21 | 10.8 | 4827 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/MS | G(UGALS) |
|---------|--------|------|--------|--------|-------|----------|
| 4891.00 | -.30 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4849.00 | -6.69 | 0.00 | -30.00 | -6.91 | 0.71 | 5233.47 |
| 4807.00 | -13.38 | 0.00 | -20.00 | -4.61 | 1.42 | 5197.81 |
| 4734.00 | -22.30 | 0.00 | -40.00 | -9.22 | 5.68 | 5127.54 |
| 4797.00 | -31.22 | 0.00 | -10.00 | -2.30 | 4.97 | 5210.71 |
| 4788.00 | -42.37 | 0.00 | -50.00 | -11.52 | 2.84 | 5200.79 |
| 4796.00 | -49.06 | 0.00 | -80.00 | -18.44 | 2.13 | 5208.49 |
| 4831.00 | -57.98 | 0.00 | -70.00 | -16.13 | -2.84 | 5252.54 |
| 4827.00 | -69.13 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wd4 FILE: wd4.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080389

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 10.8 | 4827 |
| 2 | 150.00 110.00 | 549.30 | 10.9 | 4801 |
| 3 | 140.00 150.00 | 549.30 | 10.9 | 4811 |
| 4 | 160.00 140.00 | 549.13 | 11.0 | 4823 |
| 5 | 170.00 180.00 | 549.14 | 11.1 | 4768 |
| 6 | 130.00 130.00 | 549.17 | 11.1 | 4839 |
| 7 | 130.00 180.00 | 549.17 | 11.2 | 4804 |
| 8 | 110.00 150.00 | 549.33 | 11.2 | 4854 |
| 9 | 100.00 110.00 | 549.21 | 11.3 | 4827 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/MS | G(UGALS) |
|---------|-------|------|--------|--------|-------|----------|
| 4827.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4801.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.39 | 5256.66 |
| 4811.00 | 0.00 | 0.00 | -40.00 | -9.22 | 6.39 | 5258.24 |
| 4823.00 | 0.00 | 0.00 | -30.00 | -6.91 | -5.45 | 5261.67 |
| 4768.00 | 0.00 | 0.00 | -70.00 | -16.13 | -4.97 | 5193.52 |
| 4839.00 | 0.00 | 0.00 | -20.00 | -4.61 | -2.84 | 5283.86 |
| 4804.00 | 0.00 | 0.00 | -70.00 | -16.13 | -2.84 | 5234.53 |
| 4854.00 | 0.00 | 0.00 | -40.00 | -9.22 | 8.53 | 5306.82 |
| 4827.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdc1 FILE: wdc1.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080399

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 9.1 | 4934 5278.4 |
| 2 | 50.00 140.00 | 549.24 | 9.2 | 4863 5200.8 |
| 3 | 0.00 150.00 | 549.25 | 9.2 | 4824 5160.0 |
| 4 | 60.00 180.00 | 547.02 | 9.3 | 5018 5207.9 |
| 5 | 25.00 115.00 | 549.44 | 9.4 | 4858 5225.9 |
| 6 | 40.00 160.00 | 549.38 | 9.4 | 4847 5203.3 |
| 7 | 70.00 180.00 | 549.14 | 9.5 | 4862 5202.0 |
| 8 | 110.00 120.00 | 549.47 | 9.6 | 4927 5314.1 |
| 9 | 100.00 110.00 | 549.21 | 9.6 | 4905 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA | G(UGALS) |
|---------|--------|------|--------|--------|---------|----------|
| 4934.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5273.35 |
| 4863.00 | -3.92 | 0.00 | -30.00 | -6.91 | 2.13 | 5200.80 |
| 4824.00 | -6.85 | 0.00 | -40.00 | -9.22 | 2.84 | 5160.01 |
| 5018.00 | -10.77 | 0.00 | -70.00 | -16.13 | -155.84 | 5207.87 |
| 4858.00 | -14.68 | 0.00 | -5.00 | -1.15 | 16.10 | 5225.90 |
| 4847.00 | -18.60 | 0.00 | -50.00 | -11.52 | 11.84 | 5203.30 |
| 4862.00 | -22.51 | 0.00 | -70.00 | -16.13 | -4.97 | 5201.99 |
| 4927.00 | -27.41 | 0.00 | -10.00 | -2.30 | 18.23 | 5314.12 |
| 4905.00 | -31.32 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdc2 FILE: wdc2.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080399

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 9.7 | 4903 5278.4 |
| 2 | 140.00 100.00 | 549.27 | 9.7 | 4872 5252.6 |
| 3 | 160.00 140.00 | 549.05 | 9.8 | 4913 5273.2 |
| 4 | 130.00 110.00 | 549.15 | 9.8 | 4881 5254.3 |
| 5 | 150.00 180.00 | 549.21 | 9.9 | 4851 5211.6 |
| 6 | 110.00 190.00 | 549.36 | 10.0 | 4815 5182.4 |
| 7 | 70.00 180.00 | 549.14 | 10.1 | 4812 5168.0 |
| 8 | 90.00 120.00 | 549.20 | 10.1 | 4876 5257.2 |
| 9 | 100.00 110.00 | 549.21 | 10.2 | 4891 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|--------|--------|--------|----------|
| 4903.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4872.00 | -1.18 | 0.00 | 10.00 | 2.30 | 4.26 | 5252.61 |
| 4913.00 | -2.36 | 0.00 | -30.00 | -6.91 | -11.37 | 5273.22 |
| 4881.00 | -3.93 | 0.00 | 0.00 | 0.00 | -4.26 | 5254.25 |
| 4851.00 | -5.50 | 0.00 | -70.00 | -16.13 | 0.00 | 5211.55 |
| 4815.00 | -7.07 | 0.00 | -80.00 | -18.44 | 10.42 | 5182.35 |
| 4812.00 | -9.03 | 0.00 | -70.00 | -16.13 | -4.97 | 5167.99 |
| 4876.00 | -11.00 | 0.00 | -10.00 | -2.30 | -0.71 | 5257.17 |
| 4891.00 | -12.96 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdd2 FILE: wdd2.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE - 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) |
|---------|---------------|--------|------|---------|----------|
| 1 | 100.00 110.00 | 549.21 | 8.5 | 4984 | 5278.4 |
| 2 | 100.00 190.00 | 549.26 | 8.6 | 4915 | 5191.0 |
| 3 | 140.00 210.00 | 549.28 | 8.7 | 4860 | 5132.8 |
| 4 | 130.00 230.00 | 549.21 | 8.8 | 4808 | 5070.0 |
| 5 | 60.00 120.00 | 549.05 | 8.9 | 4978 | 5271.0 |
| 6 | 130.00 160.00 | 549.17 | 8.9 | 4970 | 5264.3 |
| 7 | 150.00 130.00 | 549.05 | 9.0 | 4983 | 5278.7 |
| 8 | 100.00 130.00 | 549.22 | 9.1 | 4975 | 5285.3 |
| 9 | 100.00 110.00 | 549.21 | 9.1 | 4961 | 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|---------|--------|--------|----------|
| 4984.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4915.00 | -2.01 | 0.00 | -80.00 | -18.44 | 3.55 | 5190.95 |
| 4860.00 | -6.71 | 0.00 | -100.00 | -23.05 | 4.74 | 5132.82 |
| 4808.00 | -9.40 | 0.00 | -120.00 | -27.66 | -0.00 | 5069.99 |
| 4978.00 | -12.76 | 0.00 | -10.00 | -2.30 | -11.37 | 5270.95 |
| 4970.00 | -15.44 | 0.00 | -50.00 | -11.52 | -2.84 | 5264.30 |
| 4983.00 | -17.46 | 0.00 | -20.00 | -4.61 | -11.37 | 5278.75 |
| 4975.00 | -20.81 | 0.00 | -20.00 | -4.61 | 0.47 | 5285.31 |
| 4961.00 | -26.84 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdd1 FILE: wdd1.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE - 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) |
|---------|---------------|--------|------|---------|----------|
| 1 | 100.00 110.00 | 549.21 | 8.0 | 4991 | 5278.4 |
| 2 | 100.00 140.00 | 549.32 | 8.0 | 5001 | 5290.7 |
| 3 | 140.00 140.00 | 549.27 | 8.1 | 4985 | 5270.8 |
| 4 | 170.00 120.00 | 549.10 | 8.1 | 4979 | 5257.7 |
| 5 | 170.00 200.00 | 549.15 | 8.2 | 4873 | 5129.0 |
| 6 | 130.00 230.00 | 549.21 | 8.3 | 4808 | 5056.8 |
| 7 | 90.00 180.00 | 549.22 | 8.3 | 4956 | 5208.0 |
| 8 | 90.00 160.00 | 549.23 | 8.4 | 4956 | 5256.0 |
| 9 | 80.00 150.00 | 549.25 | 8.4 | 4948 | 5231.8 |
| 10 | 100.00 110.00 | 549.21 | 8.5 | 4984 | 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|-------|----------|
| 4991.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 5001.00 | -0.67 | 0.00 | -30.00 | -6.91 | 7.81 | 5290.72 |
| 4985.00 | -1.56 | 0.00 | -30.00 | -6.91 | 4.26 | 5270.78 |
| 4979.00 | -2.45 | 0.00 | -10.00 | -2.30 | -7.82 | 5257.71 |
| 4873.00 | -3.11 | 0.00 | -90.00 | -20.74 | -4.26 | 5129.01 |
| 4808.00 | -3.78 | 0.00 | -120.00 | -27.66 | -0.00 | 5056.81 |
| 4956.00 | -4.45 | 0.00 | -70.00 | -16.13 | 0.71 | 5207.97 |
| 4956.00 | -5.56 | 0.00 | -50.00 | -11.52 | 1.42 | 5256.00 |
| 4948.00 | -6.23 | 0.00 | -40.00 | -9.22 | 2.84 | 5231.75 |
| 4984.00 | -7.56 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdd3 FILE: wdd3.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|------------|--------|--------|------------------|
| 1 | 100.00 | 110.00 | 549.21 | 9.6 4957 5278.4 |
| 2 | 90.00 | 170.00 | 549.29 | 9.6 4903 5214.5 |
| 3 | 100.00 | 240.00 | 549.21 | 9.7 4763 5045.6 |
| 4 | 170.00 | 200.00 | 549.15 | 9.8 4846 5143.1 |
| 5 | 130.00 | 170.00 | 549.19 | 9.8 4940 5258.3 |
| 6 | 150.00 | 160.00 | 549.29 | 9.9 4943 5273.1 |
| 7 | 130.00 | 160.00 | 549.17 | 9.9 4917 5239.2 |
| 8 | 100.00 | 170.00 | 549.14 | 9.9 4916 5236.6 |
| 9 | 100.00 | 110.00 | 549.21 | 10.1 4931 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|--------|------|---------|--------|-------|----------|
| 4957.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4903.00 | -2.91 | 0.00 | -60.00 | -13.83 | 5.44 | 5214.54 |
| 4763.00 | -6.78 | 0.00 | -130.00 | -29.96 | 0.00 | 5045.63 |
| 4846.00 | -9.68 | 0.00 | -90.00 | -20.74 | -4.26 | 5143.14 |
| 4940.00 | -13.56 | 0.00 | -60.00 | -13.83 | -1.42 | 5258.29 |
| 4943.00 | -15.49 | 0.00 | -50.00 | -11.52 | 5.92 | 5273.12 |
| 4917.00 | -18.40 | 0.00 | -50.00 | -11.52 | -2.84 | 5239.18 |
| 4916.00 | -21.30 | 0.00 | -60.00 | -13.83 | -4.97 | 5236.57 |
| 4931.00 | -28.08 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdd4 FILE: wdd4.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|------------|--------|--------|------------------|
| 1 | 100.00 | 110.00 | 549.21 | 10.1 4931 5278.4 |
| 2 | 110.00 | 160.00 | 549.38 | 10.1 4913 5261.8 |
| 3 | 120.00 | 200.00 | 549.27 | 10.2 4832 5160.4 |
| 4 | 100.00 | 190.00 | 549.26 | 10.2 4865 5200.0 |
| 5 | 150.00 | 220.00 | 549.35 | 10.4 4740 5070.0 |
| 6 | 140.00 | 180.00 | 549.29 | 10.4 4876 5224.2 |
| 7 | 100.00 | 240.00 | 549.21 | 10.5 4725 5044.7 |
| 8 | 150.00 | 200.00 | 549.13 | 10.5 4811 5143.5 |
| 9 | 100.00 | 110.00 | 549.21 | 10.6 4907 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|--------|------|---------|--------|-------|----------|
| 4931.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4913.00 | -2.36 | 0.00 | -50.00 | -11.52 | 12.08 | 5261.82 |
| 4832.00 | -5.50 | 0.00 | -90.00 | -20.74 | 4.26 | 5160.44 |
| 4865.00 | -7.86 | 0.00 | -80.00 | -18.44 | 3.55 | 5200.03 |
| 4740.00 | -13.35 | 0.00 | -110.00 | -25.35 | 9.94 | 5070.00 |
| 4876.00 | -15.71 | 0.00 | -70.00 | -16.13 | 5.68 | 5224.20 |
| 4725.00 | -18.85 | 0.00 | -130.00 | -29.96 | 0.00 | 5044.74 |
| 4811.00 | -21.21 | 0.00 | -90.00 | -20.74 | -5.69 | 5143.52 |
| 4907.00 | -25.92 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdd5 FILE: wdd5.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 0804-89

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) |
|---------|------------|--------|--------|---------|----------|
| 1 | 100.00 | 110.00 | 549.21 | 10.6 | 4907 |
| 2 | 90.00 | 210.00 | 549.14 | 10.8 | 4779 |
| 3 | 140.00 | 170.00 | 549.27 | 10.8 | 4885 |
| 4 | 150.00 | 160.00 | 549.26 | 10.9 | 4882 |
| 5 | 130.00 | 190.00 | 549.17 | 11.0 | 4825 |
| 6 | 140.00 | 230.00 | 549.28 | 11.1 | 4696 |
| 7 | 120.00 | 200.00 | 549.34 | 11.2 | 4805 |
| 8 | 120.00 | 240.00 | 549.38 | 11.2 | 4671 |
| 9 | 100.00 | 110.00 | 549.21 | 11.3 | 4882 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|---------|--------|-------|----------|
| 4907.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4779.00 | -5.27 | 0.00 | -100.00 | -23.05 | -4.97 | 5117.35 |
| 4885.00 | -7.24 | 0.00 | -60.00 | -13.83 | 4.26 | 5252.27 |
| 4882.00 | -9.88 | 0.00 | -50.00 | -11.52 | 3.55 | 5253.26 |
| 4825.00 | -13.17 | 0.00 | -80.00 | -18.44 | -2.84 | 5181.67 |
| 4696.00 | -16.46 | 0.00 | -120.00 | -27.66 | 4.74 | 5044.00 |
| 4805.00 | -20.42 | 0.00 | -90.00 | -20.74 | 8.99 | 5176.85 |
| 4671.00 | -23.05 | 0.00 | -130.00 | -29.96 | 12.08 | 5028.62 |
| 4882.00 | -27.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdd5 FILE: wdd5.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 0804-89

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) |
|---------|------------|--------|--------|---------|----------|
| 1 | 100.00 | 110.00 | 549.21 | 11.3 | 4881 |
| 2 | 140.00 | 220.00 | 549.25 | 11.4 | 4729 |
| 3 | 110.00 | 200.00 | 549.18 | 11.5 | 4794 |
| 4 | 150.00 | 220.00 | 549.35 | 11.6 | 4689 |
| 5 | 110.00 | 240.00 | 549.23 | 11.7 | 4682 |
| 6 | 70.00 | 210.00 | 549.15 | 11.8 | 4747 |
| 7 | 140.00 | 170.00 | 549.27 | 11.8 | 4843 |
| 8 | 90.00 | 220.00 | 549.17 | 11.9 | 4722 |
| 9 | 100.00 | 110.00 | 549.21 | 11.9 | 4855 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|---------|--------|-------|----------|
| 4881.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4729.00 | -3.79 | 0.00 | -110.00 | -25.35 | 2.84 | 5095.46 |
| 4794.00 | -7.59 | 0.00 | -90.00 | -20.74 | -2.13 | 5169.10 |
| 4689.00 | -12.14 | 0.00 | -110.00 | -25.35 | 9.94 | 5067.71 |
| 4682.00 | -15.94 | 0.00 | -130.00 | -29.96 | 1.42 | 5050.81 |
| 4747.00 | -18.97 | 0.00 | -100.00 | -23.05 | -4.27 | 5125.28 |
| 4843.00 | -21.25 | 0.00 | -60.00 | -13.83 | 4.26 | 5248.99 |
| 4722.00 | -23.53 | 0.00 | -110.00 | -25.35 | -2.84 | 5101.95 |
| 4855.00 | -28.08 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb7 FILE: wdb7.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 034.3000
 LONGITUDE 90.0
 DATE 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) | |
|---------|------------|--------|--------|---------|----------|--------|
| 1 | 100.00 | 110.00 | 549.21 | 12.0 | 4853 | 5278.4 |
| 2 | 130.00 | 220.00 | 549.16 | 12.0 | 4733 | 5120.4 |
| 3 | 90.00 | 250.00 | 549.07 | 12.1 | 4652 | 5020.7 |
| 4 | 120.00 | 240.00 | 549.38 | 12.1 | 4650 | 5044.6 |
| 5 | 130.00 | 240.00 | 549.46 | 12.2 | 4627 | 5026.4 |
| 6 | 110.00 | 210.00 | 549.12 | 12.3 | 4755 | 5148.6 |
| 7 | 70.00 | 200.00 | 549.10 | 12.3 | 4744 | 5138.2 |
| 8 | 120.00 | 230.00 | 549.25 | 12.4 | 4676 | 5069.5 |
| 9 | 100.00 | 110.00 | 549.21 | 12.4 | 4845 | 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|--------|----------|
| 4853.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4733.00 | -0.62 | 0.00 | -110.00 | -25.35 | -3.56 | 5120.45 |
| 4652.00 | -1.85 | 0.00 | -140.00 | -32.27 | -10.18 | 5020.65 |
| 4650.00 | -3.39 | 0.00 | -130.00 | -29.96 | 12.08 | 5044.60 |
| 4627.00 | -4.32 | 0.00 | -130.00 | -29.96 | 17.76 | 5026.37 |
| 4755.00 | -5.55 | 0.00 | -100.00 | -23.05 | -6.40 | 5148.61 |
| 4744.00 | -6.17 | 0.00 | -90.00 | -20.74 | -7.82 | 5138.23 |
| 4676.00 | -7.10 | 0.00 | -120.00 | -27.66 | 2.84 | 5069.46 |
| 4845.00 | -8.64 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdb8 FILE: wdb8.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 034.3000
 LONGITUDE 90.0
 DATE 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING | G(UGALS) | |
|---------|------------|--------|--------|---------|----------|--------|
| 1 | 100.00 | 110.00 | 549.21 | 12.4 | 4845 | 5278.4 |
| 2 | 130.00 | 210.00 | 549.10 | 12.5 | 4721 | 5118.9 |
| 3 | 90.00 | 240.00 | 549.08 | 12.6 | 4652 | 5040.0 |
| 4 | 140.00 | 220.00 | 549.25 | 12.6 | 4692 | 5103.9 |
| 5 | 110.00 | 230.00 | 549.20 | 12.6 | 4678 | 5086.9 |
| 6 | 100.00 | 220.00 | 549.27 | 12.7 | 4701 | 5121.7 |
| 7 | 90.00 | 250.00 | 549.07 | 12.8 | 4635 | 5034.3 |
| 8 | 100.00 | 230.00 | 549.24 | 12.8 | 4694 | 5119.0 |
| 9 | 100.00 | 110.00 | 549.21 | 12.9 | 4813 | 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|---------|--------|--------|----------|
| 4845.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4721.00 | -5.32 | 0.00 | -100.00 | -23.05 | -7.82 | 5118.87 |
| 4652.00 | -9.31 | 0.00 | -130.00 | -29.96 | -9.24 | 5040.00 |
| 4692.00 | -13.29 | 0.00 | -110.00 | -25.35 | 2.84 | 5103.88 |
| 4678.00 | -17.28 | 0.00 | -120.00 | -27.66 | -0.71 | 5086.89 |
| 4701.00 | -19.94 | 0.00 | -110.00 | -25.35 | 4.26 | 5121.67 |
| 4635.00 | -25.26 | 0.00 | -140.00 | -32.27 | -10.18 | 5034.34 |
| 4694.00 | -29.25 | 0.00 | -120.00 | -27.66 | 2.13 | 5118.97 |
| 4813.00 | -34.56 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdd9 FILE: wdd9.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 14.6 | 4822 5278.4 |
| 2 | 0.00 110.00 | 549.28 | 14.7 | 4713 5165.2 |
| 3 | 20.00 130.00 | 549.45 | 14.8 | 4736 5197.2 |
| 4 | 30.00 150.00 | 549.24 | 14.9 | 4743 5184.7 |
| 5 | 30.00 250.00 | 549.18 | 14.9 | 4608 5011.2 |
| 6 | 50.00 220.00 | 549.23 | 15.0 | 4676 5094.7 |
| 7 | 20.00 210.00 | 549.27 | 15.1 | 4670 5092.9 |
| 8 | 30.00 180.00 | 549.32 | 15.1 | 4714 5150.9 |
| 9 | 100.00 110.00 | 549.21 | 15.3 | 4825 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|-------|----------|
| 4822.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4713.00 | 0.42 | 0.00 | 0.00 | 0.00 | 4.97 | 5165.18 |
| 4736.00 | 0.75 | 0.00 | -20.00 | -4.61 | 17.05 | 5197.16 |
| 4743.00 | 1.25 | 0.00 | -40.00 | -9.22 | 2.13 | 5184.69 |
| 4608.00 | 1.58 | 0.00 | -140.00 | -32.27 | -2.13 | 5011.23 |
| 4676.00 | 1.83 | 0.00 | -110.00 | -25.35 | 1.18 | 5094.66 |
| 4670.00 | 2.24 | 0.00 | -100.00 | -23.05 | 4.02 | 5092.91 |
| 4714.00 | 2.49 | 0.00 | -70.00 | -16.13 | 7.81 | 5150.89 |
| 4825.00 | 3.24 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdd10 FILE: wdd10.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 15.3 | 4825 5278.4 |
| 2 | 70.00 190.00 | 549.13 | 15.3 | 4742 5165.0 |
| 3 | 50.00 240.00 | 549.14 | 15.4 | 4647 5052.2 |
| 4 | 30.00 250.00 | 549.10 | 15.4 | 4618 5016.0 |
| 5 | 20.00 190.00 | 549.36 | 15.5 | 4699 5136.8 |
| 6 | 50.00 170.00 | 549.16 | 15.6 | 4758 5191.6 |
| 7 | 30.00 180.00 | 549.32 | 15.6 | 4714 5153.6 |
| 8 | 30.00 210.00 | 549.00 | 15.7 | 4694 5102.8 |
| 9 | 100.00 110.00 | 549.21 | 15.9 | 4820 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|--------|----------|
| 4825.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4742.00 | -0.45 | 0.00 | -80.00 | -18.44 | -5.09 | 5165.03 |
| 4647.00 | -1.05 | 0.00 | -130.00 | -29.96 | -4.97 | 5052.21 |
| 4618.00 | -1.50 | 0.00 | -140.00 | -32.27 | -8.05 | 5015.95 |
| 4699.00 | -2.55 | 0.00 | -80.00 | -18.44 | 10.42 | 5136.79 |
| 4758.00 | -3.00 | 0.00 | -60.00 | -13.83 | -3.56 | 5191.60 |
| 4714.00 | -3.45 | 0.00 | -70.00 | -16.13 | 7.81 | 5153.59 |
| 4694.00 | -3.90 | 0.00 | -100.00 | -23.05 | -14.92 | 5102.79 |
| 4820.00 | -5.40 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****
 PROGRAM: wdd12 FILE: wdd12.gpf
 BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 16.3 | 4835 5278.4 |
| 2 | 70.00 220.00 | 549.09 | 16.4 | 4674 5069.6 |
| 3 | 40.00 250.00 | 549.09 | 16.4 | 4638 5022.9 |
| 4 | 40.00 240.00 | 549.12 | 16.5 | 4644 5033.5 |
| 5 | 10.00 220.00 | 549.40 | 16.5 | 4631 5042.8 |
| 6 | 0.00 170.00 | 549.34 | 16.5 | 4703 5127.8 |
| 7 | 10.00 170.00 | 549.14 | 16.6 | 4700 5109.9 |
| 8 | 90.00 130.00 | 549.19 | 16.6 | 4847 5280.7 |
| 9 | 100.00 110.00 | 549.21 | 16.7 | 4840 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GS | G(UGALS) |
|---------|-------|------|---------|--------|-------|----------|
| 4835.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4674.00 | 1.00 | 0.00 | -110.00 | -25.35 | -8.53 | 5069.58 |
| 4638.00 | 1.60 | 0.00 | -140.00 | -32.27 | -8.76 | 5022.94 |
| 4644.00 | 2.20 | 0.00 | -130.00 | -29.96 | -6.40 | 5033.50 |
| 4631.00 | 3.40 | 0.00 | -110.00 | -25.35 | 13.30 | 5042.76 |
| 4703.00 | 3.40 | 0.00 | -60.00 | -13.83 | 9.26 | 5127.79 |
| 4700.00 | 3.80 | 0.00 | -60.00 | -13.83 | -4.97 | 5109.94 |
| 4847.00 | 4.60 | 0.00 | -20.00 | -4.61 | -1.42 | 5280.68 |
| 4840.00 | 5.40 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****
 PROGRAM: wdd11 FILE: wdd11.gpf
 BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 15.9 | 4820 5278.4 |
| 2 | 0.00 100.00 | 549.31 | 15.9 | 4720 5177.1 |
| 3 | 10.00 130.00 | 549.61 | 15.9 | 5180.6 |
| 4 | 50.00 170.00 | 549.16 | 16.0 | 4747 5176.7 |
| 5 | 60.00 200.00 | 547.10 | 16.0 | 4864 5148.3 |
| 6 | 40.00 240.00 | 549.12 | 16.1 | 4627 5025.1 |
| 7 | 50.00 190.00 | 549.18 | 16.1 | 4731 5151.4 |
| 8 | 50.00 210.00 | 549.23 | 16.2 | 4680 5093.2 |
| 9 | 100.00 110.00 | 549.21 | 16.3 | 4834 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GS | G(UGALS) |
|---------|-------|------|---------|--------|---------|----------|
| 4820.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4720.00 | 2.42 | 0.00 | 10.00 | 2.30 | 6.86 | 5177.09 |
| 4711.00 | 3.63 | 0.00 | -20.00 | -4.61 | 28.18 | 5180.56 |
| 4747.00 | 5.44 | 0.00 | -60.00 | -13.83 | -3.56 | 5176.68 |
| 4864.00 | 6.65 | 0.00 | -90.00 | -20.74 | -150.16 | 5148.31 |
| 4627.00 | 8.47 | 0.00 | -130.00 | -29.96 | -6.40 | 5025.07 |
| 4731.00 | 10.28 | 0.00 | -80.00 | -18.44 | -2.13 | 5151.37 |
| 4680.00 | 12.10 | 0.00 | -100.00 | -23.05 | 1.18 | 5093.17 |
| 4834.00 | 15.12 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdd13 FILE: wdd13.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 16.7 | 4841 5278.4 |
| 2 | 15.00 125.00 | 549.64 | 16.8 | 4733 5183.4 |
| 3 | 10.00 160.00 | 549.30 | 16.9 | 4740 5156.8 |
| 4 | 20.00 200.00 | 549.25 | 16.9 | 4718 5116.8 |
| 5 | 0.00 250.00 | 549.19 | 17.0 | 4606 4977.1 |
| 6 | 10.00 200.00 | 549.30 | 17.1 | 4702 5096.9 |
| 7 | 20.00 160.00 | 549.31 | 17.1 | 4763 5170.2 |
| 8 | 80.00 240.00 | 549.26 | 17.2 | 4684 5059.7 |
| 9 | 100.00 110.00 | 549.21 | 17.3 | 4868 5278.4 |

-----< CORRECTIONS >-----

| READI | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|-------|----------|
| 4841. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4733.00 | 5.67 | 0.00 | -15.00 | -3.46 | 30.79 | 5183.36 |
| 4740.00 | 7.29 | 0.00 | -50.00 | -11.52 | 6.39 | 5156.84 |
| 4718.00 | 10.53 | 0.00 | -90.00 | -20.74 | 2.61 | 5116.83 |
| 4606.00 | 13.77 | 0.00 | -140.00 | -32.27 | -1.42 | 4977.07 |
| 4702.00 | 17.01 | 0.00 | -90.00 | -20.74 | 6.39 | 5096.86 |
| 4763.00 | 19.44 | 0.00 | -50.00 | -11.52 | 7.10 | 5170.24 |
| 4684.00 | 22.68 | 0.00 | -130.00 | -29.96 | 3.55 | 5059.68 |
| 4868.00 | 29.16 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wdd14 FILE: wdd14.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080489

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 17.3 | 4868 5278.4 |
| 2 | 60.00 250.00 | 549.19 | 17.4 | 4678 5034.0 |
| 3 | 30.00 220.00 | 548.99 | 17.4 | 4748 5098.6 |
| 4 | 60.00 240.00 | 549.24 | 17.5 | 4706 5063.8 |
| 5 | 80.00 230.00 | 549.09 | 17.5 | 4748 5098.2 |
| 6 | 50.00 210.00 | 549.23 | 17.5 | 4753 5114.0 |
| 7 | 0.00 220.00 | 549.28 | 17.6 | 4690 5044.8 |
| 8 | 20.00 230.00 | 549.14 | 17.6 | 4712 5052.2 |
| 9 | 100.00 110.00 | 549.21 | 17.7 | 4897 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|--------|----------|
| 4868.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4678.00 | 5.22 | 0.00 | -140.00 | -32.27 | -1.66 | 5033.99 |
| 4748.00 | 9.14 | 0.00 | -110.00 | -25.35 | -15.63 | 5098.62 |
| 4706.00 | 11.75 | 0.00 | -130.00 | -29.96 | 2.13 | 5063.80 |
| 4748.00 | 14.36 | 0.00 | -120.00 | -27.66 | -8.53 | 5098.20 |
| 4753.00 | 18.27 | 0.00 | -100.00 | -23.05 | 1.18 | 5114.00 |
| 4690.00 | 20.88 | 0.00 | -110.00 | -25.35 | 4.97 | 5044.84 |
| 4712.00 | 24.80 | 0.00 | -120.00 | -27.66 | -5.21 | 5052.19 |
| 4897.00 | 31.32 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda1 FILE: wda1.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080589

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 8.4 | 4979 5278.4 |
| 2 | 80.00 250.00 | 549.19 | 8.5 | 4749 4996.1 |
| 3 | 70.00 230.00 | 549.05 | 8.5 | 4813 5059.8 |
| 4 | 60.00 250.00 | 549.19 | 8.6 | 4754 5001.0 |
| 5 | 50.00 250.00 | 549.08 | 8.7 | 4786 5027.6 |
| 6 | 30.00 190.00 | 549.36 | 8.7 | 4863 5144.6 |
| 7 | 20.00 140.00 | 549.31 | 8.8 | 4882 5172.8 |
| 8 | 25.00 125.00 | 549.41 | 8.9 | 4896 5198.4 |
| 9 | 100.00 110.00 | 549.21 | 9.0 | 4980 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|--------|----------|
| 4979.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4749.00 | 0.15 | 0.00 | -140.00 | -32.27 | -1.42 | 4996.09 |
| 4813.00 | 0.28 | 0.00 | -120.00 | -27.66 | -11.37 | 5059.75 |
| 4754.00 | 0.37 | 0.00 | -140.00 | -32.27 | -1.66 | 5001.04 |
| 4786.00 | 0.52 | 0.00 | -140.00 | -32.27 | -9.48 | 5027.63 |
| 4863.00 | 0.65 | 0.00 | -80.00 | -18.44 | 10.66 | 5144.63 |
| 4882.00 | 0.77 | 0.00 | -30.00 | -6.91 | 6.87 | 5172.77 |
| 4896.00 | 0.86 | 0.00 | -15.00 | -3.46 | 13.97 | 5198.35 |
| 4980.00 | 1.08 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda2 FILE: wda2.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080589

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 9.0 | 4980 5278.4 |
| 2 | 0.00 140.00 | 549.36 | 9.0 | 4857 5149.3 |
| 3 | 0.00 115.00 | 549.31 | 9.1 | 4862 5157.2 |
| 4 | 5.00 125.00 | 549.32 | 9.1 | 4855 5152.9 |
| 5 | 10.00 250.00 | 549.32 | 9.2 | 4719 4973.0 |
| 6 | 40.00 230.00 | 549.16 | 9.2 | 4809 5062.2 |
| 7 | 20.00 230.00 | 549.16 | 9.3 | 4807 5060.0 |
| 8 | 20.00 180.00 | 549.39 | 9.3 | 4847 5132.8 |
| 9 | 100.00 110.00 | 549.21 | 9.4 | 4978 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|-------|----------|
| 4980.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4857.00 | -0.33 | 0.00 | -30.00 | -6.91 | 10.42 | 5149.34 |
| 4862.00 | -0.58 | 0.00 | -5.00 | -1.15 | 6.86 | 5157.20 |
| 4855.00 | -0.75 | 0.00 | -15.00 | -3.46 | 12.31 | 5152.94 |
| 4719.00 | -1.00 | 0.00 | -140.00 | -32.27 | 7.81 | 4972.99 |
| 4809.00 | -1.16 | 0.00 | -120.00 | -27.66 | -4.97 | 5062.19 |
| 4807.00 | -1.41 | 0.00 | -120.00 | -27.66 | -5.21 | 5060.04 |
| 4847.00 | -1.58 | 0.00 | -70.00 | -16.13 | 12.67 | 5132.81 |
| 4978.00 | -2.16 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wd63 FILE: wd63.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080589

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 9.4 | 4978 |
| 2 | 70.00 250.00 | 549.20 | 9.5 | 4763 |
| 3 | 20.00 170.00 | 549.33 | 9.6 | 4867 |
| 4 | 0.00 190.00 | 549.33 | 9.7 | 4817 |
| 5 | 20.00 220.00 | 549.20 | 9.7 | 4787 |
| 6 | 50.00 200.00 | 549.17 | 9.8 | 4841 |
| 7 | 40.00 160.00 | 549.38 | 9.9 | 4879 |
| 8 | 30.00 170.00 | 549.20 | 9.9 | 4875 |
| 9 | 100.00 110.00 | 549.21 | 10.0 | 4975 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|-------|----------|
| 4978.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4763.00 | -0.60 | 0.00 | -140.00 | -32.27 | -0.95 | 5013.32 |
| 4867.00 | -0.94 | 0.00 | -60.00 | -13.83 | 8.40 | 5153.98 |
| 4817.00 | -1.36 | 0.00 | -80.00 | -18.44 | 8.33 | 5095.91 |
| 4787.00 | -1.71 | 0.00 | -110.00 | -25.35 | -0.95 | 5047.46 |
| 4841.00 | -2.05 | 0.00 | -90.00 | -20.74 | -2.84 | 5108.84 |
| 4879.00 | -2.30 | 0.00 | -50.00 | -11.52 | 11.84 | 5174.04 |
| 4875.00 | -2.64 | 0.00 | -60.00 | -13.83 | -0.71 | 5155.21 |
| 4975.00 | -3.24 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wd64 FILE: wd64.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080589

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 10.1 | 4975 |
| 2 | 30.00 200.00 | 549.22 | 10.1 | 4844 |
| 3 | 20.00 250.00 | 549.21 | 10.1 | 4734 |
| 4 | 10.00 250.00 | 549.32 | 10.2 | 4720 |
| 5 | 0.00 230.00 | 549.23 | 10.2 | 4738 |
| 6 | 10.00 190.00 | 549.35 | 10.3 | 4805 |
| 7 | 20.00 190.00 | 549.40 | 10.3 | 4825 |
| 8 | 0.00 160.00 | 549.26 | 10.4 | 4816 |
| 9 | 100.00 110.00 | 549.21 | 10.6 | 4950 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|---------|--------|-------|----------|
| 4975.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4844.00 | -6.27 | 0.00 | -90.00 | -20.74 | 0.71 | 5123.10 |
| 4734.00 | -9.41 | 0.00 | -140.00 | -32.27 | 0.00 | 4995.19 |
| 4720.00 | -12.54 | 0.00 | -140.00 | -32.27 | 7.81 | 4991.02 |
| 4738.00 | -17.25 | 0.00 | -120.00 | -27.66 | 1.42 | 5013.38 |
| 4805.00 | -21.95 | 0.00 | -80.00 | -18.44 | 9.94 | 5108.19 |
| 4825.00 | -25.09 | 0.00 | -80.00 | -18.44 | 13.38 | 5134.34 |
| 4816.00 | -29.79 | 0.00 | -50.00 | -11.52 | 3.55 | 5128.44 |
| 4950.00 | -48.40 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wds5 FILE: wds5.dat

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080599

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|------------|--------|--------|------------------|
| 1 | 100.00 | 110.00 | 549.21 | 10.6 4930 5278.4 |
| 2 | 30.00 | 230.00 | 549.24 | 10.6 4741 5048.5 |
| 3 | 0.00 | 180.00 | 549.36 | 10.7 4791 5122.5 |
| 4 | 0.00 | 170.00 | 549.34 | 10.8 4789 5121.1 |
| 5 | 10.00 | 210.00 | 549.36 | 10.8 4754 5075.4 |
| 6 | 10.00 | 230.00 | 549.09 | 10.9 4763 5061.0 |
| 7 | 0.00 | 210.00 | 549.26 | 10.9 4730 5042.1 |
| 8 | 100.00 | 170.00 | 549.14 | 11.0 4926 5254.4 |
| 9 | 100.00 | 110.00 | 549.21 | 11.1 4931 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|-------|----------|
| 4930.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4741.00 | 0.17 | 0.00 | -120.00 | -27.66 | 2.13 | 5048.51 |
| 4791.00 | 0.28 | 0.00 | -70.00 | -16.13 | 10.66 | 5122.46 |
| 4789.00 | 0.38 | 0.00 | -60.00 | -13.83 | 9.24 | 5121.08 |
| 4754.00 | 0.49 | 0.00 | -100.00 | -23.05 | 10.66 | 5075.38 |
| 4763.00 | 0.59 | 0.00 | -120.00 | -27.66 | -8.76 | 5060.96 |
| 4730.00 | 0.70 | 0.00 | -100.00 | -23.05 | 3.55 | 5042.14 |
| 4926.00 | 0.87 | 0.00 | -60.00 | -13.83 | -4.97 | 5254.36 |
| 4931.00 | 1.08 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wds6 FILE: wds6.dat

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080599

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|------------|--------|--------|------------------|
| 1 | 100.00 | 110.00 | 549.21 | 11.2 4931 5278.4 |
| 2 | 120.00 | 50.00 | 549.21 | 11.2 4855 5211.3 |
| 3 | 120.00 | 30.00 | 549.20 | 11.3 4827 5187.2 |
| 4 | 140.00 | 30.00 | 548.92 | 11.3 4832 5173.9 |
| 5 | 140.00 | 50.00 | 549.05 | 11.4 4855 5206.4 |
| 6 | 140.00 | 70.00 | 549.39 | 11.4 4858 5230.6 |
| 7 | 100.00 | 110.00 | 549.21 | 11.4 4920 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|--------|------|--------|-------|--------|----------|
| 4931.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4855.00 | -1.40 | 0.00 | 60.00 | 13.83 | -0.24 | 5211.25 |
| 4827.00 | -3.49 | 0.00 | 80.00 | 18.44 | -0.71 | 5187.25 |
| 4832.00 | -4.89 | 0.00 | 80.00 | 18.44 | -20.84 | 5173.91 |
| 4855.00 | -7.69 | 0.00 | 60.00 | 13.83 | -11.37 | 5206.41 |
| 4858.00 | -9.09 | 0.00 | 40.00 | 9.22 | 12.79 | 5230.60 |
| 4920.00 | -11.88 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda8 FILE: wda8.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080589

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 17.9 | 4899 |
| 2 | 120.00 10.00 | 549.05 | 18.0 | 4800 |
| 3 | 140.00 10.00 | 548.78 | 18.0 | 4818 |
| 4 | 160.00 50.00 | 548.46 | 18.1 | 4809 |
| 5 | 160.00 70.00 | 548.94 | 18.1 | 4871 |
| 6 | 160.00 30.00 | 548.30 | 18.2 | 4877 |
| 7 | 150.00 20.00 | 548.62 | 18.2 | 4848 |
| 8 | 160.00 10.00 | 548.33 | 18.3 | 4848 |
| 9 | 100.00 110.00 | 549.21 | 18.4 | 4931 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|--------|-------|--------|----------|
| 4899.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4800.00 | 4.94 | 0.00 | 100.00 | 23.05 | -11.37 | 5178.16 |
| 4818.00 | 11.11 | 0.00 | 100.00 | 23.05 | -30.55 | 5172.25 |
| 4809.00 | 13.58 | 0.00 | 60.00 | 13.83 | -53.29 | 5214.51 |
| 4871.00 | 17.28 | 0.00 | 40.00 | 9.22 | -19.19 | 5220.66 |
| 4877.00 | 20.98 | 0.00 | 80.00 | 18.44 | -64.66 | 5187.58 |
| 4848.00 | 24.69 | 0.00 | 90.00 | 20.74 | -41.92 | 5177.40 |
| 4848.00 | 28.39 | 0.00 | 100.00 | 23.05 | -62.53 | 5155.40 |
| 4931.00 | 34.56 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wda7 FILE: wda7.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080589

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 17.5 | 4901 |
| 2 | 160.00 90.00 | 549.09 | 17.5 | 4854 |
| 3 | 160.00 160.00 | 549.06 | 17.5 | 4894 |
| 4 | 140.00 150.00 | 549.30 | 17.6 | 4914 |
| 5 | 160.00 190.00 | 549.24 | 17.7 | 4833 |
| 6 | 160.00 70.00 | 548.94 | 17.7 | 4846 |
| 7 | 130.00 70.00 | 549.32 | 17.8 | 4860 |
| 8 | 100.00 110.00 | 549.21 | 17.9 | 4899 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|--------|--------|--------|----------|
| 4901.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4854.00 | -0.25 | 0.00 | 20.00 | 4.61 | -8.53 | 5223.92 |
| 4894.00 | -0.50 | 0.00 | -50.00 | -11.52 | -10.66 | 5249.10 |
| 4914.00 | -0.83 | 0.00 | -40.00 | -9.22 | 6.39 | 5290.40 |
| 4833.00 | -1.08 | 0.00 | -80.00 | -18.44 | 2.13 | 5191.34 |
| 4846.00 | -1.41 | 0.00 | 40.00 | 9.22 | -19.19 | 5210.39 |
| 4860.00 | -1.74 | 0.00 | 40.00 | 9.22 | 7.81 | 5252.85 |
| 4899.00 | -2.16 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wd13 FILE: wd13.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080699

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 16.3 | 4895 5278.4 |
| 2 | 100.00 50.00 | 549.26 | 16.3 | 4819 5211.4 |
| 3 | 100.00 30.00 | 549.25 | 16.4 | 4794 5186.5 |
| 4 | 30.00 70.00 | 549.06 | 16.4 | 4826 5197.2 |
| 5 | 40.00 80.00 | 549.43 | 16.4 | 4813 5206.0 |
| 6 | 0.00 150.00 | 549.20 | 16.5 | 4784 5141.3 |
| 7 | 10.00 180.00 | 549.40 | 16.5 | 4766 5126.9 |
| 8 | 60.00 250.00 | 549.19 | 16.6 | 4695 5017.2 |
| 9 | 70.00 240.00 | 549.27 | 16.6 | 4684 5012.4 |
| 10 | 100.00 110.00 | 549.21 | 16.7 | 4909 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|--------|----------|
| 4895.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4819.00 | 2.24 | 0.00 | 60.00 | 13.83 | 3.55 | 5211.41 |
| 4794.00 | 3.92 | 0.00 | 80.00 | 12.44 | 2.72 | 5186.50 |
| 4826.00 | 5.04 | 0.00 | 40.00 | 9.22 | -10.78 | 5197.22 |
| 4813.00 | 6.16 | 0.00 | 30.00 | 6.91 | 15.51 | 5206.05 |
| 4784.00 | 7.28 | 0.00 | -40.00 | -9.22 | -0.71 | 5141.25 |
| 4766.00 | 9.52 | 0.00 | -70.00 | -16.13 | 13.50 | 5126.87 |
| 4695.00 | 11.20 | 0.00 | -140.00 | -32.27 | -1.66 | 5017.21 |
| 4684.00 | 12.32 | 0.00 | -130.00 | -29.96 | 4.26 | 5012.43 |
| 4909.00 | 15.12 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wd14 FILE: wd14.gpf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.00008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080699

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 16.7 | 4908 5278.4 |
| 2 | 80.00 60.00 | 549.44 | 16.8 | 4837 5228.5 |
| 3 | 0.00 60.00 | 549.28 | 16.8 | 4795 5171.0 |
| 4 | 0.00 105.00 | 549.37 | 16.9 | 4811 5183.5 |
| 5 | 0.00 30.00 | 549.32 | 16.9 | 4779 5162.1 |
| 6 | 10.00 250.00 | 549.27 | 17.0 | 4669 4987.8 |
| 7 | 10.00 220.00 | 549.35 | 17.0 | 4726 5061.4 |
| 8 | 110.00 220.00 | 549.04 | 17.1 | 4809 5127.5 |
| 9 | 80.00 170.00 | 549.41 | 17.1 | 4855 5214.2 |
| 10 | 100.00 110.00 | 549.21 | 17.3 | 4916 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|--------|----------|
| 4908.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4837.00 | 1.05 | 0.00 | 50.30 | 11.52 | 16.34 | 5228.48 |
| 4795.00 | 1.83 | 0.00 | 50.00 | 11.52 | 4.97 | 5170.97 |
| 4811.00 | 2.36 | 0.00 | 5.00 | 1.15 | 11.13 | 5183.51 |
| 4779.00 | 3.14 | 0.00 | 80.00 | 18.44 | 7.81 | 5162.13 |
| 4669.00 | 4.45 | 0.00 | -140.00 | -32.27 | 4.26 | 4987.75 |
| 4726.00 | 4.97 | 0.00 | -110.00 | -25.35 | 9.94 | 5061.39 |
| 4809.00 | 6.28 | 0.00 | -110.00 | -25.35 | -12.32 | 5127.47 |
| 4855.00 | 7.07 | 0.00 | -60.00 | -13.83 | 13.97 | 5214.18 |
| 4916.00 | 8.44 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wd11 FILE: wd11.bpf

BASE STATION (X,Y) 100 110
REFERENCE ELEV. 549.21
DENSITY 1.8
GRID ROTATION 0
METER FACTOR 1.00008
REFERENCE READING 4887
LATITUDE 0343000
LONGITUDE 90.0
DATE 080689

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) | | |
|---------|------------|--------|--------|------------------|------|--------|
| 1 | 100.00 | 110.00 | 549.21 | 14.2 | 4900 | 5278.4 |
| 2 | 130.00 | 70.00 | 549.32 | 14.3 | 4835 | 5226.1 |
| 3 | 90.00 | 70.00 | 549.30 | 14.3 | 4849 | 5241.1 |
| 4 | 130.00 | 80.00 | 549.25 | 14.4 | 4836 | 5222.4 |
| 5 | 170.00 | 40.00 | 548.23 | 14.4 | 4836 | 5160.2 |
| 6 | 140.00 | 150.00 | 549.30 | 14.4 | 4891 | 5271.1 |
| 7 | 160.00 | 120.00 | 549.05 | 14.5 | 4879 | 5248.2 |
| 8 | 130.00 | 110.00 | 549.15 | 14.5 | 4856 | 5233.7 |
| 9 | 100.00 | 110.00 | 549.21 | 14.5 | 4893 | 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|-------|------|--------|-------|--------|----------|
| 4900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4835.00 | -0.89 | 0.00 | 40.00 | 9.22 | 7.81 | 5226.07 |
| 4849.00 | -2.22 | 0.00 | 40.00 | 9.22 | 6.39 | 5241.10 |
| 4836.00 | -3.56 | 0.00 | 30.00 | 6.91 | 2.72 | 5222.42 |
| 4836.00 | -4.45 | 0.00 | 70.00 | 16.13 | -69.63 | 5160.17 |
| 4891.00 | -5.34 | 0.00 | -40.00 | -9.22 | 6.39 | 5271.14 |
| 4879.00 | -6.23 | 0.00 | -10.00 | -2.30 | -11.37 | 5248.22 |
| 4856.00 | -7.12 | 0.00 | 0.00 | 0.00 | -4.26 | 5233.68 |
| 4893.00 | -7.56 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<< DATA SUMMARY >>>*****

PROGRAM: wd12 FILE: wd12.bpf

BASE STATION (X,Y) 100 110
REFERENCE ELEV. 549.21
DENSITY 1.8
GRID ROTATION 0
METER FACTOR 1.00008
REFERENCE READING 4887
LATITUDE 0343000
LONGITUDE 90.0
DATE 080689

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) | | |
|---------|------------|--------|--------|------------------|------|--------|
| 1 | 100.00 | 110.00 | 549.21 | 15.8 | 4883 | 5278.4 |
| 2 | 110.00 | 110.00 | 549.31 | 15.8 | 4874 | 5274.4 |
| 3 | 130.00 | 160.00 | 549.17 | 15.9 | 4880 | 5257.3 |
| 4 | 110.00 | 190.00 | 549.24 | 15.9 | 4820 | 5189.7 |
| 5 | 70.00 | 180.00 | 549.14 | 16.0 | 4821 | 5184.7 |
| 6 | 60.00 | 180.00 | 547.02 | 16.0 | 4958 | 5180.5 |
| 7 | 20.00 | 160.00 | 549.31 | 16.1 | 4784 | 5158.4 |
| 8 | 40.00 | 160.00 | 549.38 | 16.1 | 4788 | 5166.1 |
| 9 | 100.00 | 110.00 | 549.21 | 16.3 | 4895 | 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/CB | G(UGALS) |
|---------|-------|------|--------|--------|---------|----------|
| 4883.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4874.00 | 1.30 | 0.00 | 0.00 | 0.00 | 7.10 | 5274.44 |
| 4880.00 | 3.46 | 0.00 | -50.00 | -11.52 | -2.84 | 5257.29 |
| 4820.00 | 4.32 | 0.00 | -80.00 | -18.44 | 2.13 | 5189.68 |
| 4821.00 | 5.62 | 0.00 | -70.00 | -16.13 | -4.97 | 5184.66 |
| 4958.00 | 6.91 | 0.00 | -70.00 | -16.13 | -155.84 | 5180.47 |
| 4784.00 | 8.64 | 0.00 | -50.00 | -11.52 | 7.10 | 5158.36 |
| 4788.00 | 9.94 | 0.00 | -50.00 | -11.52 | 11.84 | 5166.12 |
| 4895.00 | 12.96 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |

*****<<<< DATA SUMMARY >>>*****

PROGRAM: wdg1 FILE: wdg1.opf

BASE STATION (X,Y) 100 110
 REFERENCE ELEV. 549.21
 DENSITY 1.8
 GRID ROTATION 0
 METER FACTOR 1.08008
 REFERENCE READING 4887
 LATITUDE 0343000
 LONGITUDE 90.0
 DATE 080789

-----< FIELD DATA AND RESULTS >-----

| STATION | COORD(X,Y) | ELEV | TIME | READING G(UGALS) |
|---------|---------------|--------|------|------------------|
| 1 | 100.00 110.00 | 549.21 | 8.4 | 4935 5278.4 |
| 2 | 170.00 10.00 | 548.11 | 8.4 | 4874 5155.0 |
| 3 | 110.00 80.00 | 549.19 | 8.5 | 4919 5262.1 |
| 4 | 150.00 210.00 | 549.06 | 8.5 | 4835 5129.4 |
| 5 | 10.00 220.00 | 549.27 | 8.6 | 4763 5062.1 |
| 6 | 80.00 250.00 | 549.19 | 8.6 | 4738 5020.6 |
| 7 | 100.00 110.00 | 549.21 | 8.8 | 4950 5278.4 |

-----< CORRECTIONS >-----

| READING | DRIFT | TIDE | DEPART | LATDE | FA/GB | G(UGALS) |
|---------|-------|------|---------|--------|--------|----------|
| 4935.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |
| 4874.00 | 2.11 | 0.00 | 100.00 | 23.05 | -78.39 | 5155.01 |
| 4919.00 | 4.23 | 0.00 | 30.00 | 6.91 | -1.66 | 5262.10 |
| 4835.00 | 7.04 | 0.00 | -100.00 | -23.05 | -10.89 | 5129.36 |
| 4763.00 | 9.16 | 0.00 | -110.00 | -25.35 | 4.02 | 5062.09 |
| 4738.00 | 11.27 | 0.00 | -140.00 | -32.27 | -1.42 | 5020.61 |
| 4950.00 | 16.20 | 0.00 | 0.00 | 0.00 | 0.00 | 5278.35 |